Three Essays on Corporate Social Responsibility and Financial Reporting

by

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Abstract

This Doctoral Thesis includes three empirical essays on financial reporting quality and corporate social responsibility. In chapter one we examine a set of CSR-disasters and argue that stakeholders become more critical of CSR performance in industries affected by the disasters. Our setting allows us to study whether socially enforced increases in CSR performance create sufficient improvements in firms' corporate culture to positively affect financial reporting quality. In chapter two we study the consequences of missing analyst forecasts for CSR and non-CSR firms. Finally, in chapter three I study heterogeneous CSR strategies in firms that have the same CSR performance and its consequences.

Introduction

This Doctoral Thesis consists of three empirical papers that focus on the intersection between financial reporting quality (FRQ) and corporate social responsibility (CSR). In the light of the existing demands that firms take steps to ensure that CSR is inherent in their businesses, the questions of how to implement CSR practices and how to measure the impact of CSR on firms' other attributes (e.g. accounting quality), remain largely unanswered. I study these issues in this Thesis.

The first paper is titled "Corporate Social Responsibility and Financial Reporting Quality: Evidence from CSR-Disasters" (co-authored with Juan M. Garcia Lara and Beatriz Garcia Osma). In this paper, we introduce the concept of CSR-disasters and argue that stakeholders become more critical of CSR performance in industries affected by the disasters. CSR-disasters are large technological disasters that can be attributed to particular firms and that trigger attention for CSR performance. CSR-disasters enable us to isolate plausibly exogenous increases in CSR performance for firms that operate in affected industries. These settings allow us to study whether socially enforced increases in CSR performance create sufficient improvements in firms' corporate culture for having a positive effect on financial reporting quality. We find that firms with low pre-disaster CSR performance significantly improve CSR in the post-disaster period, mainly through window dressing practices. For these firms, CSR increases lead to greater earnings management and lower quality of narrative disclosure. This suggests that demand-driven CSR practices may lead to unfavorable outcomes and, in particular, impair transparency. We contribute to the literature in several

ways. First, we add to studies addressing how technological and natural disasters shape firms' behavior. We focus on the question of whether CSR-disasters' initiated CSR performance creates sufficient changes in firms' corporate culture for having a positive impact on FRQ. Second, we extend prior research that provides mixed evidence on the link between CSR and FRQ. Finally, our results contribute to the literature that studies whether, compared with non-CSR firms, CSR firms perform better when they face idiosyncratic or systematic shocks. We show that firms in the industries affected by the disasters, in fact, do improve their CSR performance in the post-disaster periods. Furthermore, the increase in CSR performance varies depending on pre-disaster levels of CSR. In line with the prior research, we argue that CSR builds goodwill in crises time, when stakeholders' scrutiny inevitably increases.

I turn to the question of how financial analysts view CSR firms in my second paper, entitled "Do Markets Reward CSR Firms? Evidence from Target Beating Behavior" (co-authored with Antonio B. Vazquez). We study the capital markets consequences of missing analyst forecasts for CSR and non-CSR firms. We hypothesize that CSR firms may have lower capital markets penalties. First, CSR firms may have different investors that are less critical of short-term performance. Second, previous CSR performance may create goodwill in the form of high reputation and strong connections with stakeholders that helps preventing negative market expectations regarding future prospects. We show that in the group of firms that miss analyst forecasts ('missers') CSR firms experience lower negative price revisions, proxied by 3-day returns surrounding the release of the earnings announcement. Further, we find that in the group of firms that miss the target, CSR firms with larger proportion of long-term investors receive a lower penalty. Finally, we find that CSR firms undertake less short-sighted actions, proxied by earnings management, to achieve the target. We conclude that high CSR performance helps to prevent negative market expectations regarding future firms' prospects and, thus, mitigates negative price revisions in the case of target missing. We contribute to the literature by providing evidence that CSR firms have lower incentives to engage in target beating behavior, as they receive a lower market penalty for target missing.

Finally, our results highlight the insurance benefit of CSR and show how investors adjust their beliefs about the future performance of 'missers,' with differing attitudes toward CSR.

Finally, the third paper "Different Similarities and Similar Differences. New Evidence on Corporate Social Responsibility" investigates heterogeneous CSR strategies in firms that have the same CSR performance and its consequences. In particular, I aim to address the following questions: Do heterogeneous CSR strategies that underpin the same CSR performance matter? What can we learn about CSR beyond CSR performance? First, I find that firms with the same CSR performance but with different CSR strategies differ in size, age, profitability, cash holdings, leverage, and research intensity. Second, I find that CSR strategy has an association with future CSR and financial performance, which is unrelated to the current CSR performance. Overall, these results provide additional insights on CSR that have not been previously captured by CSR performance. I contribute to the literature that studies how firms differ along different CSR dimensions. I show that there is a heterogeneity between firms with the same average CSR performance and this heterogeneity has an association with future CSR and financial performance.

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Chapter 1

Corporate Social Responsibility and Financial Reporting Quality: Evidence from CSR-Disasters

1.1 Introduction

The debate over the desirability of corporate social responsibility (CSR) practices (Ferrell et al. 2016; Hart and Zingales 2017) has resulted in the mandatory implementation of social obligations for the private sector in some countries.[1] In the recent spate of technological disasters, proponents of obligatory state-regulated CSR raise with new vigor. For instance, after the BP oil spill of 2010, President Obama argued that "*one of the lessons we've learned from this spill is that we need better regulations, better safety standards, and better enforcement when it comes to offshore drilling*" (Obama 2010). Further, Mr. Obama "*acknowledged that federal agencies had failed to ensure that safety and environmental standards were being*

[1] For instance, in 2013, the Government of India (Ministry of Corporate Affairs) enacted Section 135 of the Indian Companies Act that obligates all companies that meet specified financial thresholds to spend 2% of average net profits on CSR (Government of India 2016). Denmark, South Africa, China, Malaysia, and Brazil have a mandatory reporting obligation on the amount spent on CSR activities (Ioannou and Serafeim 2017).

met and announced a thorough review of the oversight process" (Broder and Cooper 2010). This implied that not only BP, but all *other* firms dedicated to offshore drilling were also under suspicion of lacking social responsibility.

Despite the salience of CSR issues, there is a shortage of empirical evidence on whether enforced (either regulatory enforced or socially enforced) and voluntary CSR practices have identical properties and lead to similar social surplus. In this study, we introduce the concept of CSR-disasters and argue that these disasters enable us to isolate plausibly exogenous increases in socially enforced CSR performance for firms that operate in affected industries. These settings allow us to study whether socially enforced increases in CSR performance creates sufficient improvements in firms' corporate culture for having a positive effect on financial reporting quality.

Prior studies have explored the link between CSR and financial reporting quality (FRQ), focusing in particular on earnings management practices. For instance, Kim et al. (2012) argue that CSR firms are more critical of ethical issues including incidents of earnings management. For CSR firms, these authors find limited evidence of aggressive earnings management through abnormal accruals and real activities manipulation. However, one could argue that in equilibrium, firms voluntarily and simultaneously choose to engage in CSR and avoid earnings management. If that is the case, it might be problematic to infer whether high CSR performance in fact affects financial reporting quality.

To address this issue, we focus on a simple framework. We argue that CSR-disasters plausibly provide a randomly assigned increase in CSR performance (see following discussion) and thereby help to eliminate the problem of simultaneity. In other words, this setting allows us to attribute any change in financial reporting quality to the influence of CSR. Further, observing *ex-post* the sign of the change (or no change) in financial reporting quality helps to distinguish between 'true' and 'window dressing' CSR,[2] where, following prior literature, we define CSR as voluntary stakeholder-oriented actions that improve social conditions and

[2] True CSR is associated with real changes in corporate ethical standards. In contrast, window dressing CSR practices are not associated with firms' internalization of CSR policies as high ethical standards.

that are not required by the law and extend beyond firm's profit maximization (McWilliams and Siegel 2000; Godfrey et al. 2009; Bénabou and Tirole 2010; Liang and Renneboog 2017).

We use a set of technological disasters as our proxy for CSR-disasters. By definition, a technological disaster refers to a failure of a technological structure or/and human error in controlling or using the technology.[3] Examples of technological disasters can be explosions, chemical spills, or gas leaks.[4] We focus on major technological disasters that were not caused by the formal violation of the law or malice, but rather, by a set of failures in meeting technological, environmental and ethical standards. As an illustrative example, consider the garment factory collapse in Rana Plaza, Dhaka on April 24, 2013. If the clothing companies that operated in the Bangladesh factory (Primark or Canada's Loblaw) had gone further than just meeting their formal obligations, it is likely that the collapse could have been prevented. For instance, instead of blindly accepting the building certificate issued by the Bangladeshi authorities, clothing firms could have sent "people to check every pillar."[5] Key to our identification strategy is that the collapse provoked a reaction not only from the firms that directly operated in Rana Plaza, but also from other firms in the industry. More than 150 companies signed a legally binding agreement (The Accord on Fire and Safety in Bangladesh) and 27 US brands signed their own non-legally binding industry-led version (The Alliance for Bangladesh Worker Safety).[6] These agreements facilitate worker-management committees in factories and obligate companies to independently inspect factories, provide

[3] Following the definition proposed by The Institute of Food and Agricultural Sciences (IFAS) a technological disaster is an event caused by a malfunction of a technological structure and/or some human error in controlling or handling the technology. The effects on families and individuals may be long lasting and can endure for years. However, symptoms may appear gradually, and impacts may not be seen immediately. For more details follow Lindsey et al. (2017). In this study we use the terms disaster, disaster event, catastrophe, and treatment interchangeably.

[4] For example, Pek et al. (2018) classify the following events as technological disasters: chemical spills, collapses, explosions, fires, gas leaks, poisonings, radiation leaks, and large-scale transportation accidents. Perhaps the most famous technological disasters are The BP oil spill on April 20, 2010 and The Fukushima Daiichi nuclear incident on March 11, 2011.

[5] The Economist (May 4th, 2013). `https://www.economist.com/leaders/2013/05/04/disaster-at-rana-plaza`.

[6] The Accord on Fire and Safety is a "legally binding agreement between companies and unions where companies commit to independent inspections and transparent reporting, including developing strong worker-management committees in factories" (Gifford and Ansett 2014).

transparent reports, and, if necessary, financially contribute to fix detected problems.[7]

In this study, we define CSR-disasters as technological disasters that (1) are sufficiently large to affect the whole disaster-affected industry; and (2) that, plausibly, could have been prevented or mitigated if a firm had gone further than just meeting the minimum formal obligations imposed by law. As a result of these CSR-disasters, same-industry firms (treated firms)[8] (1) are exposed to a negative stakeholder reaction (negative shock); and (2) may undertake efforts to mitigate it (Blacconiere and Patten 1994; Desai 2011; Diestre and Rajagopalan 2014; Pek et al. 2018).

In our tests, we exploit a set of major technological disasters, as reported by The International Disaster Database (EM-DAT) that occurred between 2004 and 2012 in the US. We measure CSR performance using MSCI (formely KLD) data. Using a research design similar to Flammer (2015), we apply a differences-in-difference approach to estimate the effect of the disasters on CSR. More specifically, if a firm operates in an industry that is exposed to a technological disaster, we compute the difference in CSR before and after the catastrophe. Then we compare this difference with the corresponding difference in industries that are not affected by the catastrophe.

We argue that a CSR-disaster is a negative shock to the relationship between a firm and its stakeholders. Given that stakeholders' positive attitude in the form of firm's social capital has a valuable effect on firm's financial performance (Lev et al. 2010; Cheng et al. 2014; Shiu and Yang 2017), managers have to undertake actions to restore this relationship. Thus, we expect that firms improve CSR performance in the post-disaster period. We propose two possible mechanisms through which strengthening CSR performance may lead to strengthening the relation between a firm and its stakeholders. First, because high CSR performance can help to differentiate treated firms from the guilty firm by signalling the low

[7] In addition to the agreements, a dozen global brands (including Gap, H&M, Mango, and Walmart) have contributed $21.5m to Rana plaza Donors Trust Fund, which was set up to award compensations to victims and their families (Westervelt 2015).

[8] Henceforth, when we refer to treated firms we mean firms that operate in disaster affected industries (treated industries) other than firms that directly caused the disasters. Section 3 provides details about CSR-disasters used.

operational risk and high preparation for the possible regulatory changes associated with the disaster (Heflin and Wallace 2017). Second, an increase in CSR performance can signal firms' social awareness and high environmental and social standards that do not necessarily mitigate firms' risk. Prior literature suggests that CSR helps to build social capital and to form stakeholders' positive attitudes, which would mitigate the negative consequences of a possible disaster (Godfrey 2005; Godfrey et al. 2009). We find strong evidence that treated firms improve CSR performance in the post-disasters periods.

Next, we address whether firms' response to a CSR-disaster is sensitive to the pre-disaster level of CSR. Prior literature suggests that firms with previously accumulated social capital in the form of high CSR performance can mitigate negative market reactions because (1) market participants expect that these firms have lower costs associated with the disaster (Godfrey et al. 2009); and (2) because these firms have social trust and stakeholders' loyalty (Godfrey 2005; Shiu and Yang 2017). Further, incremental increases in CSR performance may not be equally useful for firms with different pre-disaster CSR performance. For instance, Clarkson et al. (2004) show that in the pulp and paper industry only low-polluting firms (e.g. firms with high environmental CSR performance) extract incremental economic benefit from environmental expenditures. We show that only firms with low pre-disaster CSR improve CSR in the post-treatment periods.

Finally, we study whether socially enforced CSR performance leads to better FRQ. Following Kim et al. (2012) we argue that improvement in true CSR performance leads to enhancement in all corporate ethical standards. Firms that exert efforts and spend resources to achieve high social, ethical, and environmental standards may apply these standards to all their business decisions, including financial reporting. For instance, Atkins (2006) argue that being socially responsible means being transparent in firms' financial reporting. Conversely, if CSR-disasters generate entirely window dressing improvements in CSR performance, then there will be a negative or no relationship between CSR and FRQ in the post-disaster period.

We use earnings management and narrative disclosure quality as two alternative proxies

for financial reporting quality. We measure earnings management using discretionary accruals (Jones 1991; Subramanyam 1996; DeFond and Subramanyam 1998; Kothari et al. 2005) and real activities manipulation proxies (Roychowdhury 2006). We employ the Bog Index as a proxy for the quality of narrative disclosure (Bonsall et al. 2017). Our results show that for firms with low pre-disaster level of CSR, there is a negative relationship between CSR and FRQ in the post-disaster period. These firms increase earnings management through abnormal discretionary accruals and have lower readability of their disclosure.

Our findings indicate that treated firms respond to CSR-disasters by improving subsequent CSR performance and that this exogenous increase in CSR leads to deterioration in FRQ. We contribute to the literature in several ways. First, we add to the literature that studies how technological and natural disasters shape firms behavior (Desai 2011; Diestre and Rajagopalan 2014) and, in particular, how these disasters trigger attention towards CSR (Heflin and Wallace 2017; Liang and Renneboog 2017). Heflin and Wallace (2017) study whether firms in the oil and gas industries with extensive environmental disclosure suffer from lower negative price revision in the post BP-oil spill period. We focus on the question of whether CSR-disasters' initiated CSR performance creates sufficient changes in firms' corporate culture for having a positive impact on FRQ. Noteworthy, we do not restrict changes in CSR performance only to real CSR practices. Rather, we empirically study whether the improvement in CSR performance is driven by 'real' or window dressing practices. In contrast, Heflin and Wallace (2017), by focusing on environmental disclosure, test how the disclosure of 'real' CSR actions impact stock prices. Finally, we explore a set of major technological disasters, while Heflin and Wallace (2017) focuses on one-event the BP oil spill. Our study is different from Liang and Renneboog (2017) in that they investigate whether firms' choice to participate in disasters relief depends on their countries' legal origin. In our paper, we focus on the question of whether a forced improvement in firms' CSR performance creates a sufficient shift in their corporate culture. In our settings, improvement in CSR performance is exogenous towards firms' specific characteristics and, thus, does not

reflect firms' choice. Second, using the KLD database allows us to distinguish whether the improvement in the CSR performance is channeled through increases in CSR strengths or decreases in CSR concerns.

Second, we extend prior research that provides mixed evidence on the link between CSR and FRQ (Petrovits 2006; Prior et al. 2008; Kim et al. 2012). While Kim et al. 2012 document that, on average, firms with better FRQ are associated with higher CSR, Prior et al. 2008 claim that managers, who engage in earnings management, are more inclined to implement CSR, than their counterparts, who do not engage in earnings management. However, these results might potentially be driven by other correlated omitted variables, which is difficult to account for in the absence of exogenous variation in CSR. In our study, the usage of technological disasters (CSR-disasters) allows us to identify exogenous variations in CSR performance and eliminate the impact of potential confounding factors. We show that higher CSR performance leads to lower FRQ. This result is important in light of the current discussion about whether firms should be required to spend a share of their profits on CSR policies.

Finally, our results contribute to the literature that studies whether, comparing with non-CSR firms, CSR firms perform better when they face idiosyncratic or systematic shocks (Godfrey 2005; Godfrey et al. 2009; Lins et al. 2017). For instance, Godfrey 2005 and Godfrey et al. 2009 show that CSR performance limits the negative impact of firms' idiosyncratic shocks on stock prices. Further, Lins et al. 2017 show that CSR firms perform better during the 2008-2009 financial crisis, since their stakeholders have higher trust in them. We show that firms in the industries affected by the disasters, in fact, do improve their CSR performance in the post-disaster periods. Furthermore, the increase in CSR performance varies depending on pre-disaster levels of CSR. In line with the previous research we argue that CSR builds goodwill in crises time, when stakeholders' scrutiny inevitably increases.

The paper proceeds as follows. Section 1.2 reviews the literature and presents our hypotheses. Section 1.3 describes the data and methodology, while Section 1.4 presents

results. Section 1.5 shows additional analyses and Section 1.6 concludes.

1.2 Literature Review and Hypotheses Development

To derive theoretical predictions on the firms' reaction to the CSR disasters, we draw from different strands of literature. We begin this section by analyzing prior literature to argue that affected firms can use CSR as a response to CSR-disasters. Next, we hypothesize how the pre-disaster level of CSR influences the response to these disasters. Finally we investigate how changes in CSR performance affect firms' financial reporting quality.

1.2.1 Firms' Response to CSR-Disasters through Corporate Social Responsibility

Prior literature documents that natural disasters generate waves of corporate donations and subsequent increases in CSR performance (Muller and Kräussl 2011; Madsen and Rodgers 2015). In this section, we ask whether CSR-disasters provoke subsequent improvements in CSR performance in firms that are exposed to the negative spillover effects.

CSR-disasters also generate negative spillover effects that can be substantial for firms in the same-industry.[9] For instance, as a result of CSR-disasters, same-industry firms (treated firms) are exposed to negative consequences such as negative abnormal stock returns (Diestre and Rajagopalan 2014; Heflin and Wallace 2017) and higher scrutiny from regulators (Desai 2011). In our framework, if it is revealed through a highly visible CSR-disaster that one firm in the industry neglects CSR standards in environmental, safety or technological related

[9] The phenomenon that one firm's deviant behavior can result in the punishment of other (not responsible) firms in the same industry is discussed in prior studies (Desai 2011; Diestre and Rajagopalan 2014; Liang and Renneboog 2017). Diestre and Rajagopalan (2014) suggest that in the short run, market participants tend to form their beliefs, based on the highly visible and available information, such as belonging to one industry. The authors provide two reasons for the spillover. First, firms in one industry may have the same third party relationships (e.g. relationships with suppliers) which may cause the accident. The second explanation comes from the socio cognitive literature. External audiences predict organizations' future behavior based on the behavior of industry peers (for more details, see Diestre and Rajagopalan (2014, 1130-1131)). For more evidence on the negative spillover effect, follow Appendix F.

matters, *other* firms in the same industry become suspect of also violating these norms. Thus, we study how firms that experience negative spillover effects respond to CSR disasters.

A CSR-disaster is a negative shock to the relation of the firm with its stakeholders. We propose two possible mechanisms that explain why an improvement in CSR performance in the post-disaster period may lead to an improvement in the firm-stakeholders relation.

First, firms may improve CSR performance to signal that they are less risky and have high quality operational processes and, overall, to differentiate themselves from the guilty firm in terms of safety. Heflin and Wallace (2017) propose that large technological disasters update investors' expectations on the likelihood of the recurrence of the disaster and the following regulatory changes. Further, the authors study the case of the BP oil spill in 2010 and show that firms in the oil and gas industry improve their environmental performance in the post-disaster period. Heflin and Wallace (2017) argue that firms improve their CSR in the post-disaster period to signal their readiness for possible regulatory changes. Overall, this leads to the prediction that true CSR-performance increases after CSR-disasters.

Further, we draw from the research that argues that CSR can contribute to firms' positive image and by doing so can add to the relationship with stakeholders. In particular, we argue that to be useful, improvements in CSR performance do not necessary need to directly reduce firms' operational risk. Firms can simply improve CSR to signal their ethical and environmental standards (window dressing CSR). Uzzi (1997) and Godfrey et al. (2009) argue that CSR performance creates the moral capital that helps to improve the relationship with stakeholders. Further, using a risk management model, Godfrey (2005) shows that this moral capital can contribute to shareholders' wealth in the time of disasters. We hypothesize that in firms with higher CSR performance stakeholders are more loyal in the post-disaster period and, thus, impose lower penalties.

Based on prior literature, our prediction is that after CSR-disasters, affected firms (treated firms) increase CSR to signal their operational quality and social awareness and, thus, to improve their relationship with stakeholders and subsequent financial performance.

This hypothesis, stated in its alternative form, is as follows:

> ***H1:*** *Firms in the industry that experience a CSR-disaster (treated firms) improve their CSR performance in the post-disaster period.*

1.2.2 Pre-disaster Level of CSR Performance

Firms with different pre-disaster levels of CSR may differently react to CSR-related negative externalities, and improve their CSR to different extents in a post-disaster period. This would hold, first, if firms with high pre-disaster CSR performance do not suffer from negative market reactions. Then, these firms would not be incentivized to change their CSR. Godfrey (2005) and Godfrey et al. (2009) introduce the view that CSR performance has an 'insurance-like effect,' whereby CSR performance limits the potential negative impact on stock price of negative events related to corporate operations. In other words, CSR expenditures act as an insurance premium that the firm pays to avoid market losses in the case of a negative event. Firms with strong reputation for CSR suffer less because (1) they are expected to have lower costs associated with the disaster in the future (Godfrey et al. 2009); and (2) because they have accumulated 'moral reputational capital' (Godfrey 2005; Shiu and Yang 2017).

In line with this view, Lins et al. (2017) argue that high CSR performance accumulates firm-specific social capital in the form of trust between a firm and both its stakeholders and investors. This social capital pays off during periods when the overall level of trust in corporations is low. Further, these authors show that firms with high CSR performance outperform their peers during the 2008-2009 financial crisis. In related research, Muller and Kräussl (2011) show that the more a firm is known for socially irresponsibility the greater was the negative impact of Hurricane Katrina on the stock prices and greater the probability that this firm improved its CSR performance in the post-Katrina period (through corporate philanthropic disaster response). Heflin and Wallace (2017) argue that firms in the oil and gas industry with high environmental disclosure before the BP oil spill of 2010 experience less negative equity share price changes because market participants expect that the costs of the

disaster will be lower for these firms. Further, they show that firms with poor environmental disclose in the pre-spill period improve their disclosure in the post-disaster period. The authors also show that this improvement in disclosure is not entirely window dressing and that it is associated with an improvement in environmental performance.

A second reason why firms may differently react to CSR-disasters is that marginal increases in CSR performance may be not equally useful for firms with different pre-disaster CSR performance. For instance, Clarkson et al. (2004) show that the market does not equally value environmental expenditure for different firms in the pulp and paper industry. Specifically, only low-polluting firms extract incremental economic benefit from environmental expenditures. The market does not value environmental expenditures for high-polluting firms and further assess them by the existence of unbooked environmental liabilities.

Based on this prior literature we assume that firms with lower-CSR performance before the disaster have more incentives to improve firm-stakeholders relationships and, thus, they will improve their CSR more in the post-treatment period.

Against this backdrop, our second hypothesis is:

H2: *Firms in CSR-disaster industries (treated firms) with lower pre-disaster CSR performance improve their CSR more in the post-disaster period.*

1.2.3 CSR Effects on Financial Reporting and Disclosure Quality

Following Kim et al. (2012) we argue that improvements in CSR performance lead to enhancement in all corporate ethical standards. Firms that exert efforts and spend resources to achieve high social, ethical, and environmental standards may use these standards in all their business decisions, including financial reporting. For instance, Atkins (2006) argue that being socially responsible means being transparent in financial reporting. Thus, if CSR-disasters cause increases in true CSR performance, we should observe an improvement of financial reporting quality.

Alternatively, if CSR-disasters induce purely window dressing CSR, then there will be a negative or no effect on FRQ. The main reason for this could be that window dressing CSR does not lead to improvements in corporate ethical standards or may even be associated with managerial misbehavior. For instance, Petrovits (2006) shows that managers use firms' payments to their corporate foundations to manage financial reporting targets, and Prior et al. (2008) show that managers that engage in earnings management have incentives to use CSR to please stakeholders and gain their support. Given this mixed evidence on the relationship between CSR and FRQ we formulate the following hypothesis:

> ***H3:*** *Increases in CSR performance that are induced by CSR-disasters affect financial reporting and disclosure quality.*

1.3 Data and Sample Selection

1.3.1 International Disasters Data

To construct a set of CSR-disasters we use a set of major technological disasters that took place in the US and that we obtain from The International Disaster Database (EM-DAT).[10] EM-DAT is widely used in the literature (e.g. Evan et al. (2011); Lutz et al. (2014); Lesk et al. (2016)) and well-known as one of the most comprehensive databases on disaster events in the world (Voigt et al. 2016). This database has information about natural (geophysical, meteorological, hydrological, etc.) and technological (industrial, transport, and miscellaneous) disasters. Each event is accompanied by the information on date and type of the event, country name, location, total deaths, total number of people affected, and total damage in monetary units.[11] Each event in EM-DAT meets at least one of the following criteria: over 10 deaths, over 100 people affected (and/or injured, homeless), and a request for international

[10] EM-DAT is publicly available data. For more details follow `http://www.emdat.be/`.

[11] Total deaths (definition considered in EM-DAT): it is the sum of deaths and missing. Total affected (definition considered in EM-DAT): it is the sum of the injured, affected and left homeless after a disaster. (`http://www.emdat.be`)

assistance and/or declaration by the government of a state of emergency.

For the period from 2004 to 2012 EM-DAT provides three major (classified by total damage) technological disasters. The most harmful one is the BP oil spill of April 20, 2010 (EVENT I). The rig explosion was owned by Transocean and drilling for BP. This explosion killed 11 people and caused a damage of over $20 billion. After the oil well explosion, 4.9 million barrels of oil and gas leaked into the Gulf of Mexico.

The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (the presidential commission) concluded that the disaster was avoidable and was caused in part by a series of poor cost-cutting decisions made by management and by overall lack of safety culture.[12] "*BP did not have adequate controls in place to ensure that key decisions in the months leading up to the blow-out were safe or sound from an engineering perspective.*" It added that "*[g]overnment oversight [...] must be accompanied by the oil and gas industry's internal reinvention: sweeping reforms that accomplish no less than a fundamental transformation of its safety culture. Only through such a demonstrated transformation will industry—in the aftermath of the Deepwater Horizon disaster—truly earn the privilege of access to the nation's energy resources located on federal properties.*" In a chapter of its final report, the presidential commission emphasizes the importance of culture that has to ensure priority of safety and responsibility at the executive level. "*The critical common element is an unwavering commitment to safety at the top of an organization: the CEO and board of directors must create the culture and establish the conditions under which everyone in a company shares responsibility for maintaining a relentless focus on preventing accidents. Likewise, for the entire industry, leadership needs to come from the CEOs collectively, who can apply pressure on their peers to enhance performance*" (National Commission 2011).

[12] The commission uses definition that is formulated by The United Kingdom Health and Safety Executive and defines safety culture as the product of individual and group values, attitudes, and perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organisation's health and safety management. It adds that [a] more popular description is that safety culture means doing the right thing even when the no one is watching. There are two kinds of safety: occupational safety, which refers to keeping people safe, and process safety, which refers to the procedures for minimizing risk more generally.

In his interview, Donald F. Boesch, a member of the investigating commission,said that they had identified "*a whole sequence of poor decisions with unfortunate consequences when put together*."[13] Overall, the evidence from the presidential commission indicates that BP suffered from a lack of ethical and safety standards that may have prevented the explosion. We use the BP oil spill as our first event and, following prior studies (Heflin and Wallace 2017), we consider industries with SIC codes 13 (Oil and Gas Extraction) and 29 (Petroleum Refining and Related Industries) as treated by this disaster.

According to EM-DAT, the second largest technological disaster is the Georgia Sugar Refinery Explosion. On February 7, 2008, dust exploded on the Imperial Sugar refinery in Port Wentworth, Georgia. The accident caused 13 deaths, injuries to 40 people, and damage over $323 million. According to the investigation by the Occupational Safety and Health Administration (OSHA) and the Bureau of Alcohol, Tobacco, Firearms and Explosives sugar dust was the fuel for the fire. The disaster occurred in the Cane Sugar Refining industry (SIC Code 2062) and was directly caused by the process of sugar refinery. Other industries within SIC code 20 are not linked to refinery processes, therefore only SIC 2062 firms are considered to be affected by the disaster. Given that observations with SIC code 2062 are missing in our sample we do not include this disaster in our event study.[14]

The third largest event is the San Bruno Gas Pipeline Explosion. On September 9, 2010, natural gas pipeline, owned by Pacific Gas and Electric (PG&E, primary SIC Code 4931 – Electric and other Services Combined) company, exploded in San Bruno, California (EVENT II). The explosion killed 8 and injured 58 people, destroyed 38 and damaged 70 homes, and destroyed a suburban neighbourhood. Consumer Protection and Safety Division (CPSD) found that PG&E "*violated accepted industry practice when constructing the section*

[13] BBC News (January 6th, 2011) `https://www.bbc.com/news/world-us-canada-12124830`

[14] Industries within SIC code 20 (Food and Kindred Products): 201 – Meat products; 202 – Dairy Products; 203 – Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties; 204 – Grain Mill Products; 205 – Bakery Products; 206 – Sugar and Confectionery Products; 207 – Fats and Oils; 208 – Beverages; 209 – Miscellaneous Food Preparations and Kindred Products. Within SIC code 206 only industry 206 only industry 2062 relates to sugar refinery. Rest industries are the following: 2061 – Cane Sugar, except Refinery; 2063 – Beet Sugar; 2065 – Candy and other Confectionery Products; 2066 – Chocolate and Cocoa Products; 2067 – Chewing Gum; 2068 – Salted and Roasted Nuts and Seeds.

of pipe that failed." It added that PG&E suffered from systemic failure of "*corporate culture to emphasize safety over profits*" (California Public Utilities Comission 2012). During the trial, it was shown that "*the utility [PG&E] had cut its budget for pipeline inspection by 26 percent in 2009, the year before the explosion. The prosecution also showed an internal document from 2008 that said profits were the company's top priority; safety was fifth, or last*" (Fuller 2016). Overall, along with other factors, low corporate and safety standards led to the explosion that, according to the mayor Mr. Ruane, was preventable. We consider all firms with 49 SIC code as treated.

Finally, we include one event that is not presented in the EM-DAT as a technological disaster, but to our knowledge, perfectly suits to our research settings. Our third event is the Fukushima Daiichi Nuclear Disaster that occurred on March 11, 2011 in Japan (EVENT III). The consequences of this disaster, however, affected the energy sector worldwide, including the US. EM-DAT does not classify this event as technological for the following reason. Initially, it was caused by the tsunami which, in turn, was caused by The Great East Japan earthquake. However, according to the Fukushima Nuclear Accident Independent Investigation Commission, the nuclear accident was foreseeable. The plant operator, Tokyo Electric Power Company (TEPCO) failed to take basic security measures. Further, Naomi Hirose, TEPCO president, admitted that ''*even if a tsunami caused the accident, we are the operator of the Fukushima nuclear power plant and we do take responsibility*" (Hirose 2015). Thus, this event meets our two necessary conditions that are a) to be caused by business entities, and b) to be sufficiently large. We consider all firms with 49 SIC code as treated.

1.3.2 Firm-level Data

CSR data is obtained from MSCI (formerly KLD).[15] KLD covers the largest 3000 U.S. publicly traded companies by market capitalization.[16] KLD ratings are well known and

[15] To rule out the possibility that our findings are driven by the fact that we use data from KLD, we repeat our main analysis with ASSET4, as an alternative source of CSR data. For more details, follow Appendix 1.E.

[16] Prior 2003 the composition of the covered firms was different. For more details, follow Appendix 1.B

widely used in the CSR literature (e.g., Godfrey et al. (2009), Barnett and Salomon (2012), Flammer (2015), Lins et al. (2017), and Fernando et al. (2017)). KLD provides information on how firms address the needs of their stakeholders along different social dimensions, such as environment, community, human rights, employee relations, diversity, products, corporate governance, and controversial business issues, including alcohol, gambling, firearms, military, nuclear power, and tobacco. Each social dimension is twofold and has both strength and concern components.

We obtain accounting data from Compustat. For data on financial variables, we use CRSP. Bog index is coming from Bonsall et al. (2017). Consistent with the previous research (Kim et al. 2012), we exclude financial firms (SIC codes 6000-6999). All continuous variables are winsorized at the top and bottom 1 percent of their distributions. Although the exact number of observations depends on the specific regression, the baseline sample for which we estimate the equations contains 16281 firm-year observations and 3114 unique firms for the period 2003 - 2013.

1.3.3 Measurement of CSR and FRQ

CSR Measures

To construct our CSR proxy (*CSR_SCORE*), we follow Kim et al. (2012) and subtract concern-related measures from strength-related ones among five social dimensions: environment, community, employee relations, diversity, and product. In 2010 the industry-based key issue rating model was introduced to KLD.[17] We circumvent this potential problem by scaling each KLD dimension by the maximum value of this dimension within the year.[18]

The use of the aggregate proxy for CSR performance (*CSR_SCORE*) has been widely

[17] Prior 2010 all of the positive ESG performance indicators were searched for all of the companies. Starting from 2010, all companies are assessed for limited set of industry specific positive ESG indicators. For more details follow Appendix 1.B.

[18] For instance, in 2010 the maximim value of community strength dimension (com_str_num) is 4 (firm with cusip = 45814010). Then, in 2010 we scale all community strength values by 4 (com_str_num/4).Thus, the scaled KLD dimensions have values from 0 to 1.

criticized (Entine 2003; Godfrey et al. 2009). The primary criticism stresses that the information value in the individual social categories can be destroyed as a result of subtracting concerns from strengths, as well as summing different social dimensions. Further, Lins et al. (2017) emphasize that some components of *CSR_SCORE* could be more critical to enhancing the trust of all of a firm's stakeholders than others. Thus, following Lins et al. (2017), we desegregate *CSR_SCORE* into two parts: those that mainly beneficial for external stakeholders (*EXTERNAL*) and those that mainly beneficial for internal stakeholders (*INTERNAL*).

To measure financial reporting quality (FRQ), we use a number of earnings management and narrative disclosure proxies that we describe in detail next.

Earnings Management Measures

According to Healy and Wahlen (1999, p. 368), "[e]arnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." We use discretionary accruals (Jones 1991; Subramanyam 1996; DeFond and Subramanyam 1998; Kothari et al. 2005) and real activities manipulation (Roychowdhury 2006) as two alternative earnings management proxies.[19] To measure earnings management through discretionary accruals we estimate Modified-Jones (1991) model that is augmented by including ROA_{t-1} (Kothari et al. 2005). This model describes the expected level of accruals given firm fundamentals.[20] To address the issue that earnings management can be based on income-increasing or income-decreasing accruals (Warfield et al. 1995; Klein 2002),

[19] Some recent studies caution that two stage models can lead to incorrect inferences (W. Chen et al. 2018). To address this issue we repeat our main analysis but instead of using only second-step regressors we regress the residual from a first step (ACC, AB_CFO, AB_EXP, or AB_PROD) on the first- and second-step regressors. Untabulated results confirm that results are qualitatively and quantitatively same to the main results of this paper.

[20] We use the residuals from the following annual cross-sectional industry regression model as estimates of firm i's discretionary accruals in time t: $TA_{it}/A_{it-1} = \alpha_0(1/A_{it-1}) + \alpha_1((\Delta REV_{it} - \Delta REC_{it})/A_{it-1}) + \alpha_2(PPE_{it}/A_{it-1}) + \alpha_3(IBXI_{it-1}/A_{it-1}) + \epsilon_{it}$

we use absolute value of discretionary accruals for our analysis (ABS_DA).

Roychowdhury (2006, p. 336) defines real activities manipulation (RAM) as "management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds." Following Roychowdhury 2006 we measure RAM through (1) abnormal cash flow from operations (AB_CFO), (2) abnormal production costs (AB_PROD), and (3) abnormal discretionary expenses (AB_EXP).[21] Further, following Kim et al. (2012) we calculate fourth RAM proxy ($COMBINED\_RAM$) as a linear combination of above three.[22]

Narrative Disclosure Quality

Lexical properties, or readability, of disclosure is an important dimension of FRQ (Li 2008). The term "readability" refers to how complex a text is and how difficult it is to read it and extract necessary information.[23] In 1998 SEC issued the handbook promoting companies to use "plain English" in writing all publicly disclosed documents. The SEC encourages the use of short sentences, everyday words and active voice. Authors should be confident that the final version of a document captures the original meaning, and it is written in the easiest possible way. With this document SEC emphasizes importance of lexical properties of financial disclosure and the effect it may have on investors and markets.

We use the Bog Index as our main proxy for readability (Bonsall et al. 2017). This Index captures the processing costs associated with the type of language used in financial disclosure. The Bog Index captures linguistic attributes such as sentence length, passive

[21] The exact versions of the models are as equations (1), (4), and (5) in Roychowdhury (2006, p. 344-345). The residuals from equations (1), (4), and (5) are our measure of AB_CFO, AB_PROD, and AB_EXP, respectively.

[22] $COMBINED\_RAM = AB\_CFO - AB\_PROD + AB\_EXP$ By the construction, $COMBINED\_RAM$ increases as firms constrain their RAM.

[23] The Cambridge dictionary suggests the following meaning: "Easy and enjoyable to read" (`http://dictionary.cambridge.org/dictionary/english/readable`). The Oxford dictionary offers a similar, but slightly different definition: "The quality of being legible or decipherable" (`http://www.oxforddictionaries.com/definition/english/readability`).

voice, weak verbs, overused words, complex words, and jargon (Bonsall et al. 2017). In contrast to the Fog Index (Li 2008; Loughran and McDonald 2011), which counts all multi-syllabic words as complex, the Bog Index measures words familiarity base on a proprietary list of over 200,000 words. A higher value of the Bog Index refers to a lower level of financial disclosure readability.

1.3.4 Empirical Models

Differences-in-Difference Approach

First, we measure how firms adjust their CSR after the disasters take place. We estimate the following simple regression:

$$CSR_{i,T} = \beta_0 + \beta_1 CSR\_DISASTER_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 MB_{i,t-1} + \beta_5 LEV_{i,t-1} + \beta_6 CH_{i,t-1} + \epsilon_{i,t}, \quad (1.1)$$

where *CSR_DISASTER* is a dummy variable that equals one for treated industries in the years after the disasters (including the years of the disasters)[24] and i indexes the company and t indexes the year of the CSR-disaster. CSR is alternatively one of the following proxies: *CSR_SCORE*, *EXTERNAL*, or *INTERNAL* and T is t, $t+1$, or $t+2$.[25] These are as previously defined. The rest of the variables are as described in Appendix A. The set of control variables is consistent with the previous research (Flammer 2015). We use year and firm fixed effects and cluster standard errors at the two-digit SIC level.[26] The coefficient

[24] *CSR_DISASTER* equals interaction between time dummy (*time*) and industry dummy (*treated*). Dummy *time* and time fixed effect are collinear. Dummy *treated* and firm fixed effect are collinear. For that reason, we do not include *time* and *treated* dummies in the regressions. Year and firm fixed effects help us to control for omitted time- and firm-specific variables. Thus, as a main specification we use regression with year and firms fixed effects and without *year* and *treated* dummies. We repeat all tests with *time* and *treated* dummies and without year and firm fixed effects (i.e. the following specification: $Dependent\_variable = \beta_0 + \beta_1 CSR\_DISASTER + \beta_2 time + \beta_3 treated + \Sigma CONTROLS_{i,t} + \epsilon_{i,t}$). All results are qualitatively and quantitatively the same. For brevity, we do not tabulate them.

[25] We awareness that a larger time window increases the risk that CSR reactions may be contaminated by information that is unrelated to the CSR-disasters.

[26] Here and after, following Bertrand et al. (2004) we cluster standard errors at the dimension of the treatment

of interest is β_1, which measures the difference in CSR performance between treated and control firms after the technological disaster. If our tests support the hypothesis that firms boost CSR performance after the catastrophes, the coefficient β_1 is expected to be positive.

Instrumental variable (IV) Regressions

To study the effect of enforced CSR - instrumented by the CSR-disasters - on FRQ, we use two-stage least squares (2SLS). In the first stage, we regress *EXTERNAL*[27] on the CSR-disasters. Specifically, we estimate the following model:

$$\begin{aligned} EXTERNAL_{i,t+1} = {} & \beta_0 + \beta_1 CSR\_DISASTER_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 MB_{i,t-1} \\ & + \beta_5 LEV_{i,t-1} + \beta_6 CH_{i,t-1} + \beta_7 COMBINED\_RAM_{i,t-1} + \beta_8 RD\_INT_{i,t-1} \\ & + \beta_9 AD\_IND\_INT_{i,t-1} + \beta_{10} GOVERNANCE_{i,t-1} + \beta_{11} BIG4_{i,t-1} \\ & + \beta_{12} FIRM\_AGE_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{1.2}$$

where *CSR_DISASTER* is as previously defined and all other variables are as described in Appendix A. We use firm and year fixed effects and cluster standard errors at the two-digit SIC level. The predicted values from Eq (1.2) provide the "instrumented" *EXTERNAL* (*f_EXTERNAL_hat*) - i.e., the exogenous component of the *EXTERNAL*. In the second stage, we estimate the following equation using *f_EXTERNAL_hat* in lieu of *EXTERNAL*:

$$\begin{aligned} EM_{i,T} = {} & \beta_0 + \beta_1 f\_EXTERNAL\_hat_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 ROA_{i,t-1} \\ & + \beta_4 MB_{i,t-1} + \beta_5 LEV_{i,t-1} + \beta_6 CH_{i,t-1} + \beta_7 COMBINED\_RAM_{i,t-1} \\ & + \beta_8 RD\_INT_{i,t-1} + \beta_9 AD\_IND\_INT_{i,t-1} + \beta_{10} GOVERNANCE_{i,t-1} \\ & + \beta_{11} BIG4_{i,t-1} + \beta_{12} FIRM\_AGE_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{1.3}$$

(two-digit SIC level).

[27] As it is shown in Section 1.4, on average, firms in our sample improve their CSR performance through *EXTERNAL* component of *CSR_SCORE*. Thus, using *EXTERNAL* component (instead of *CSR_SCORE*) in the first stage of IV (Eq1.3) helps us to better satisfy the inclusion restriction (the treatment (i.e., CSR-disasters) need to trigger relevant changes in CSR performance).

where EM is a proxy for absolute value of discretionary accruals (ABS_DA) and T is $t+2$, or $t+3$. The coefficient of interest is β_1, which provides an estimate of the effect of CSR on FRQ.[28]

1.3.5 Validity of The Instrumental Variable (IV) Approach

Simple OLS estimation with CSR as independent and FRQ as dependent variables is subject to a classic endogeneity problem. CSR reflects a firm choice, and this choice may correlate with some unobservable firm characteristics that also affect FRQ.[29] For instance, big firms may have higher CSR performance and FRQ at the same time. Further, a potential concern is that CSR and FRQ are jointly determined.[30] CSR firms would be more inclined to produce better reporting if high ethical standards increase the cost of manipulations. On the other hand, better information environment (proxied by FRQ) could increase stakeholders' awareness of firms' commitment to CSR, making it more beneficial. Thus, to obtain a consistent estimate of the CSR impact on FRQ, we apply 2SLS approach with predicted values of CSR as an instrument.

A valid IV requires meeting the following criteria: (1) it has to highly correlate with the endogenous regressor "instrument strength"); (2) it has to be "as good as randomly assigned"; (3) the instrument has to predict the outcome variable only through the instrumented variable CSR (Atanasov and Black 2016).

To satisfy the first criterion, the exogenous component of CSR has to correlate with CSR performance. In our case, the first-stage has a single endogenous regressor and a single instrument. The t-value of latter is 4.44 that is higher than the critical value of $\sqrt{10} \approx 3.2$, allowing us to conclude that our instrument is relevant.

The second criterion, exogeneity of treatment, means that treated firms do not anticipate and impact the likelihood or the magnitude of CSR-disasters. Given the rare nature of

[28] Equations for the first- and second- stage estimations for the other dependent variables are presented in Appendix 1.C.
[29] e.g. omitted variables - one of the three classical sources of endogeneity
[30] e.g. simultaneity - one of the three classical sources of endogeneity

these events and the fact that we exclude the firms which directly provoked the disasters, it is unlikely that treated firms can accurately estimate the other firms' probability of disaster and adjust the level of CSR.

Another potential concern is that treated and control groups may have different unobservable trends which may affect the results. For instance, treated industries may have different pre-treatment CSR-growth trend than the control ones. We do not find evidence of pre-existing trends (See Figure 1.2). Further, following Christensen et al. 2017 we examine differences in pre-disasters trends in our outcome variable *EXTERNAL* across treated and control groups by mapping out counterfactual treatment effects over our sample period. We exclude the indicator for the year immediately before the first two disasters, making 2009 the benchmark period. Results in Figure 1.3 show that the counter-factual treatment effects in the pre-disaster periods are small and statistically indistinguishable from the benchmark period, which provides additional support for the parallel-trends assumption.

To ensure that some specific firm-level determinants of CSR do not drive the result, we include a set of control variables in *t-1*. Finally, as a robustness test we perform PSM on this set to further ensure that the results are not driven by them.

Third, IV has to satisfy "only-through" (also know as exclusion) restriction. Our empirical specification requires that IV - exogenous variation in CSR - should neither have a direct effect on FRQ, nor should it affect FRQ through omitted variables. In general, we cannot empirically test a direct effect condition. However, we can at least to rule out the reverse effect of our dependent variable on the instrument, i.e. the possibility that FRQ directly influences the likelihood of CSR-disasters. It may be argued that there is no economic reasoning for why the level of accruals or readability would have a direct impact on the likelihood of a CSR-disaster.

The omitted variables assumption implies that no firm characteristic that can potentially affect FRQ, changes after the CSR-disasters. Although changes in CSR performance are arguably the most plausible and straightforward outcome of the CSR-disasters, we ac-

knowledge that there is still some possibility that other firm characteristics alter in the post-disaster period. For instance, firms can improve their corporate governance quality, as a signal of commitment to ethical standards and stronger risk-management. However, our untabulated results show that firms do not systematically improve the quality of corporate governance. Overall, even though we cannot empirically test whether any other firm characteristic changes after CSR-disasters, we argue that there is a potential problem for our identification strategy if this firm characteristic (1) has a direct effect on FRQ and (2) this effect has the same direction as CSR. Otherwise, it would attenuate our result, but not amplify it.

Exclusion restriction also requires that no other shocks or events, that could also affect treated firms, happen around the same time. Such a coincidence could potentially produce spurious and biased results. Perhaps the most relevant event is the change of KLD methodology in 2010. In short, after 2010, companies are estimated for a *limited* set of industry specific positive ESG[31] indicators.[32] However, it is not a quagmire for our research if the effect of the methodology change is the same for all industries or the difference is random. On the other hand, this would be a potential problem if the methodology change is systematically different for treated and control industries. In other words, if KLD methodology was changed equally for all industries but ones with SIC codes 13, 29, and 49 it would confound our results. Despite the fact that this is unlikely, we minimize this concern as discussed previously. In short, we scale each KLD dimension to its maximum within each industry-year. This adjustment alleviates the problem that some industries (treated industries) mechanically have greater potential to achieve higher CSR_SCORE.

Finally, following prior literature (Angrist and Evans 1998; Bennedsen et al. 2007; Atanasov and Black 2016) we recognize that the shock is not constant across treated firms, and the IV only estimates the average effect of improved CSR performance on the subset of firms that respond to the instrument ("local average treatment effect"). In our settings (as

[31] ESG - environmental, social, and governance performance
[32] For more details about the evolution of KLD database follow Appendix 1.B.

it is shown in Table 1.5) "compliers" are mostly those firms in the treated industries that have low pre-treatment level of CSR. Overall, with this caveat in mind, we believe that our settings represent a meaningful IV approach.

1.4 Results

1.4.1 Descriptive Statistics

Table 1.1 presents the sample distribution by the two-digit SIC code industry. The most heavily represented industry is Business Services (SIC code 73, 13.27%), followed by Chemical and Allied Products (SIC code 28, 11.37%), and Electronic and Other Electronic Equipment (SIC code 36, 8.73%). Industry distribution in the sample is consistent with prior research (Kim et al. 2012).

Table 1.2 reports descriptive statistics for selected variables. All variables are defined in Appendix A. On average, firms in the sample are socially irresponsible and have *CSR_SCORE* less than 0 (*CSR_SCORE* mean is -0.21).[33] In other words, the average firm in our sample has more concerns than strengths, consistent with Kim et al. (2012) and Lins et al. (2017). By construction, the means of earnings management proxies are 0.

The mean value of *ADJ_ROA* is 0.03, indicating that, on average, our sample firms are more profitable than their industry peers. 90% of the firms is audited by the *Big 4* accounting firms. On average, firms' *R&D* (advertising) expenditures are 16% (1%) of their net sales. *FIRM_AGE* 2.70 means, that the average age of the firms in our sample is 13 years.

Table 1.3 presents Pearson correlations. *CSR_SCORE* has negative correlation with the absolute value of discretionary accruals and abnormal production costs. There is a positive correlation between CSR proxy and abnormal cash flow from operations (*AB_CFO*), ab-

[33] To have comparable with prior research summary statistics (e.g. Kim et al. (2012)) we also tabulate results for unscaled *CSR_SCORE*. Unscaled *CSR_SCORE* has the following descriptive statistics: obs = 16281; mean = -0.16; std.dev. = 2.23; p25 = -2 p50 = 0 p75 = 1.

normal discretionary expenses (*AB_EXP*), and *COMBINED_RAM*. Overall, our descriptive statistics and correlations are consistent with the prior research (Kim et al. 2012).

1.4.2 Relationship between CSR and FRQ

First, we test whether firms that operate in the affected industries (treated firms) experience negative price revision after CSR-disasters. Specifically, we calculate the cumulative abnormal return (*CARs*) for each firm and 3 days event window by summing across the 3 days in an event window. Heflin and Wallace (2017) document that firms in oil and gas industries after the BP oil spill in 2010 experienced a negative stock price reaction (proxied by cumulative abnormal returns). Muller and Kräussl 2011 find that majority of US firms experience negative abnormal stock returns after Hurricane Katrina in 2005. The negative impact is stronger for firms with low CSR performance (irresponsible firms) before the hurricane. Our results (untabulated) show that the means for the 3-day *CARs* are negative and significant at the one percent level across all EVENTs. These results supports the premise that firms in the treated industries experience a negative spillover effect that is caused by CSR-disasters. According to this line of thought, treated firms have to adjust their CSR performance to mitigate the effect of CSR-disasters.

To provide perspective on the effect of CSR-disasters, Figure 1.2 plots the evolution of average *EXTERNAL* in treated (blue solid line) and control (red dashed line) groups before and after the treatment. This figure provides three insights. First, *EXTERNAL* is trending upward in both treatment and control groups. This trend is consistent with observations in the previous studies (Flammer 2013, 2015) and emphasizes the importance of using a control group - not accounting for changes in KLD index at the control group would overstate the effect of CSR-disasters on CSR performance (proxied by KLD index), as it would capture some of the time trend.[34] Second, before the treatment the difference in the *EXTERNAL* in treatment and control groups is relatively constant. Third, following the CSR-disasters, the

[34] Partially, we solve this potential source of error by scaling our CSR proxy (*CSR_SCORE*, *EXTERNAL*, or *INTERNAL*). Please find additional discussion of KLD trends and composition in Appendix 1.B.

two lines diverge: firms in the treated industries increase their *EXTERNAL* substantially more compared to the control group. Further, Figure 1.2 provides evidence that two years after the CSR-disasters treated firms steadily increase their *EXTERNAL*. However, due to data availability we cannot follow the long-term dynamics of the treatment effect.

Table 1.4 presents the main results (Eq.1.1). In Columns 1-3 (4-6, and 7-9) the dependent variable is in the year of the CSR-disasters (one year ($f\_\sharp$), and two years ($f2\_\sharp$) after the CSR-disasters). The dependent variable in columns 1, 4, and 7 is *CSR_SCORE*, while in columns 2, 5, and 8 (3, 6, and 9), it is *EXTERNAL* (*INTERNAL*). In all models, we include firm fixed effect because some firms may be more likely to invest in CSR than others and may have been differently affected by the CSR-disasters. We also control for time-varying omitted variables by including year fixed effect. In Table 1.5 we re-estimate Eq. (1.1), but instead of including all observations, we divide treated firms into ones with high and low CSR performance before the CSR-disasters.[35]

For each specification, Table 1.4 and Table 1.5 report the coefficient on CSR-disasters dummy (*CSR_DISASTER*) and its standard error in parentheses. As can be seen, the coefficient on CSR-disasters is positive and statistically significant for specifications with *EXTERNAL* as dependent variable.[36] Results in Table 1.5 show that improvement in CSR performance is mainly driven by firms with low pre-disaster CSR performance.

Following Lins et al. (2017) we examine whether it is a firm's CSR performance in aggregate (*CSR_SCORE*) or a specific component of CSR that is important in the post-disasters period. In Table 1.4 and Table 1.5, we separately estimate the change of *EXTERNAL* and *INTERNAL* components of *CSR_SCORE* after the CSR-disasters, and find that the improvement in *CSR_SCORE* is entirely driven by *EXTERNAL* component (Environment, Community, and Human Rights). Further, the results suggest that firms consistently im-

[35] We define treated firms as with high (low) CSR performance if there *EXTERNAL* performance is greater (lower or equal) than the medium within industry-year one year before the CSR-disasters. Results are qualitatively and quantitatively similar if we define treat firms as with high/low CSR according to pre-disaster *CSR_SCORE* (instead of *EXTERNAL*).

[36] Increase in *EXTERNAL* is mainly driven by *ENVIRONMENT* and *HUMAN* dimensions.

prove their CSR performance in three years after the CSR-disasters. This result is consistent with the idea, that CSR variables are very sticky and it takes time to significantly improve CSR performance. Overall, the evidence in Table 1.4 and Table 1.5 support the hypothesis that treated firms respond to the CSR-disasters by increasing CSR performance mainly through *EXTERNAL* component.

Next, we examine whether improvement in CSR performance leads to change in FRQ. Table 1.6 and Table 1.7 present the results of IV regression analyses of discretionary accruals and the quality of narrative disclosure. We find a negative relation between CSR and FRQ. Specifically, in Table 1.6 the estimated coefficient on predicted value of *EXTERNAL* (*f_EXTERNAL_hat*) is positive and significant ($p < 0.01$), indicating that treated firms manage earnings more through accruals.[37] We observe similar results from the regressions of narrative disclosure (Table 1.6, columns 5 and 6). Together evidence suggest that enforced CSR leads to deterioration in FRQ. In turn, this result means that firms that are enforced to increase CSR performance do it mainly through window dressing CSR.

1.4.3 Robustness Checks

Table 1.8 and Figure 1.1 support robustness of the main results of the paper. Following prior studies (Atanasov and Black 2016; Flammer and Kacperczyk 2016a) we construct leads and lags model. Table 1.8 presents treatment dynamics of the CSR-disasters on the change in CSR performance (proxied by *EXTERNAL* component). The results show that treatment is not anticipated by the firms. However, our results reinforces the presumption that treated and control firms have different CSR performance before the CSR-disasters (coefficients before the treatment are negative and significant).[38]

To further enhance the credibility of our results, we next conduct a placebo test. For

[37] In untabulated tests we do not find evidence that improvement in CSR performance leads to change in real activities manipulation (*AB_CFO*, *AB_PROD*, *AB_EXP*, and *COMBINED_RAM*)

[38] Ancillary results show that using *CSR_SCORE* as a dependent variable (instead of *EXTERNAL*) does not change the conclusion that treatment is not anticipated by the firms. In this specification coefficients before the treatment are insignificant and close to zero. For brevity, we do not tabulate this test.

each year of the events we randomly assign treated industry. Then we estimate Eq. (1.1). We repeat this exercise 1000 times and plot the discretized probability density of the placebo coefficients in Figure 1.1. The graph shows that the placebo coefficient largely follows a normal distribution centered at zero (mean = -0.116).

1.5 Additional Analyses

1.5.1 Investment in CSR

The arguments provided so far indicate that, when faced with CSR-disasters, treated firms increase their CSR to improve their reputation and differentiate themselves from the responsible firm. Further we show that this improvement in CSR has a negative impact on FRQ. Thus, as we discuss previously, we conclude that CSR-disasters induce window dressing CSR that is not associated with real changes in corporate ethical standards. However, Owens et al. (2016) show that idiosyncratic shocks can misspecify discretionary accruals models. For instance, because of investing in CSR projects, a firm could have a cash flow level that is lower than the average in the industry (i.e. this firm would have negative *AB_CFO*, which is a proxy for real earnings management). Also, this firm may have higher Bog Index because with initiated new projects to increase CSR, managers may have to use more technical terminology (i.e. difficult words that increase Bog Index). Overall, lower FRQ (that is proxied by discretionary accruals models and Bog Index) potentially could be driven by 'true' CSR.

To alleviate this concern, we investigate whether increase in CSR after the CSR-disasters is associated with financial investments in CSR. Following Di Giuli and Kostovetsky (2014), we study whether improvement in CSR is associated with higher levels of Selling, General, and Administrative expenses (*SG&A*). Evidence in Table 1.9 suggests that ,on average, improvement in CSR is not associated with increase in *SG&A* expenses. Only firms that have high CSR before the CSR-disasters improve their CSR through investing in *SG&A*. The conclusion from this result is twofold. First, consistent with the main finding of this pa-

per, CSR-disasters induce window-dressing CSR that does not entail positive outcomes, such as improvement in FRQ. Second, this result supports the idea that voluntary CSR (those firms that have high CSR before the CSR-disasters) have real CSR (that is associated with investments in CSR), and this CSR performance is associated with high ethical corporate standards (Kim et al. 2012).[39]

1.5.2 Risk Management *versus* Greenness

The above findings provide evidence of a negative relation between CSR and FRQ in the post-disaster period, when firms are forced to improve their CSR performance. Further, we find that improvement in CSR performance is not associated with investment in CSR. Thus, we conclude that improvement in CSR comes mainly from window dressing practices. To provide more granularity in our results, we repeat our analyses separately for *STRENGTHS* and *CONCERNS* dimensions of *CSR_SCORE*.

Several recent studies have emphasized the importance of distinguishing between *STRENGTHS* and *CONCERNS* (e.g., Kacperczyk (2009), Kim et al. (2014), and Ioannou and Serafeim (2015)). From this perspective, 'doing good' (*STRENGTHS*) and 'doing no harm' (*CONCERNS*) are fundamentally different and reflect different underlying mechanisms. Thus, subtracting *CONCERNS* from *STRENGTHS* would not be reasonable, as these variables are not perfectly substitutable. Further, Fernando et al. (2017) argue that it is only decreasing *CONCERNS* that is associated with firms' risk and financial cost reduction. On the other hand, increasing *STRENGTHS* cannot be explained by any risk management actions.[40] In our settings, it means that if treated firms aim to improve their CSR perfor-

[39] We acknowledge that alternative interpretations of this evidence cannot be fully ruled out. Following Di Giuli and Kostovetsky 2014 we assume that improvement in CSR is associated with investment in SG&A. However, investment in some CSR dimensions may not show up in higher levels of SG&A account. Thus, no change in SG&A account may simply mean that firms undertake CSR practices that are recognized through other accounts.

[40] More precisely, Fernando et al. (2017) argue that *ENVIRONMENTAL* strength and concerns have different impact on firms' environmental risk exposure and the likelihood of potential losses. We repeat our analysis with only *ENVIRONMENTAL* strength and concerns as dependent variables (instead of composite *STRENGTH* and *CONCERNS*. See variable definitions in Appendix 1.A). Our results are qualitatively and

mance to decrease the likelihood of the disaster repetition (i.e. 'real' CSR) they would do it through decreasing *CONCERNS*. In turn, if treated firms had reputational purpose (i.e. window dressing CSR), they would increase CSR via increasing *STRENGTHS*.

Table 1.10 reports the results of estimating Eq. (2) separately for *STRENGTHS* and *CONCERNS* as dependent variables. The results suggest that firms improve their CSR performance through increasing *STRENGTHS*. Coefficient for *CONCERNS* is negative but insignificant. These results provide additional evidence that treated firms improve their CSR performance through window dressing activities that are not related to risk-management practices and do not reduce possible future losses associated with the disasters.

1.5.3 Cross-Sectional Heterogeneity

We examine whether our baseline results differ depending on cross-sectional characteristics that prior literature has linked to accounting quality.[41] First, we study whether corporate governance quality matters for firms' reaction to the disasters. Building on the intuition from prior accounting studies that good corporate governance mechanisms constrain earnings management (Klein 2002; X. Chen et al. 2015), we expect that firms with better corporate governance have better FRQ in the post-disaster period.

We use two proxies for corporate governance quality. First, we use the proportion of independent directors (over board size) one year before the disasters (*Ind_Dir*). If *Ind_Dir* is higher than the median *Ind_Dir* within the industry-year, we assign the firm to the high corporate governance quality partition. Otherwise, we allocate it to the low corporate governance quality one. Second, we use the entrenchment index (*E-INDEX*) developed by Bebchuk et al. (2008) as an inverse proxy for corporate governance quality. We split firms to the groups with high and low *E-INDEX* following the same logic as with *Ind_Dir*. Table 1.11 Panels A and B present results for *Ind_Dir* and *E-INDEX*, respectively. As expected,

quantitatively similar those that we tabulate for *STRENGTHS* and *CONCERNS* below.

[41] Note that even though these tests provide more granularity in our results, there is still possibility that other firm characteristics might have impacted managers' incentives/ability to manipulate FRQ.

firms with better pre-disaster corporate governance engage less in earnings management and have higher readability of their financial disclosure. This result is consistent with the notion that corporate governance improves corporate transparency and, thus, leads to better FRQ.

Second, we study whether firms with higher debt pressure before the disasters are more likely to decrease FRQ in the post-disaster period. Prior literature suggests that higher debt pressure motivates managers to engage more in earnings management activities (Press and Weintrop 1990; Watts and Zimmerman 1990; Reynolds and Francis 2000). As before, we split the sample according to the pre-disaster level of leverage. Results in Table 1.12 support the premise that firms with higher debt pressure (proxied by higher leverage) have more incentives to manage accruals. We also find that firms with higher leverage are more likely to decrease readability of their financial disclosure.

1.5.4 Propensity Score Matching

As a final analysis, we conduct propensity score matching (PSM) to further alleviate the concern that firms in treated and control groups are different. To construct a sample of firms that are similar to the treated firms, we match each treated firm to a control firm on the basis of firm-level characteristics using the following procedure. The nearest neighbour is calculated based on six firm-level characteristics: CSR performance (CSR_SCORE), size ($SIZE$), market-to-book (MB), leverage ratio (LEV), return on asset (ROA), and cash holdings (CH). Matching variables are computed as average in the three years preceding the disasters. This matching procedure is used in prior literature to construct a set of comparable firms (e.g. Flammer 2015). We repeat all main test with the PSM sample (see Appendix 1.D for results.) All results remain qualitative and quantitatively similar to those shown in the main part of the paper.

1.6 Conclusion

We study the reaction of firms that operate in industries involved in technological disasters, which we denote CSR-disasters. There are at least two reasons why affected firms would improve their CSR in the post-disaster periods. First, firms can decrease their operational risk by investing in CSR (*true* CSR). Second, firms can build a positive image and signal their social and environmental awareness through CSR (*window dressing* CSR). In both scenarios, CSR helps improve the relationship with stakeholders. In turn, these firms would be less penalized by their stakeholders in the post-disaster period.

Using a differences-in-difference approach, we show that firms in the affected industries improve their CSR performance in post-disasters periods. This is driven by firms with low pre-disaster CSR performance. Then, using instrumental variables (IV) approach, we show that increases in CSR performance leads to lower financial reporting and disclosure quality.

Taken together, our evidence suggests that in some particular cases, when managers are forced to improve firms' CSR performance, they do so by implementing window dressing practices that are not associated with real changes in firms' ethical or safety standards. Although firms with low CSR performance before the CSR-disasters significantly increase their CSR rating, we do not find evidence that these firms in fact do increase their CSR expenditures (proxied by *SG&A* expenses). The only exception are firms, with high CSR performance before the CSR-disasters. These firms improve their CSR rating through real investments in CSR. Our results reinforce the awareness that some CSR practices may lead to unexpected unfavorable outcomes, in particular deterioration in FRQ.

APPENDIX 1.A: Variable Definition

Variable	Variable Definitions
$CSR\_Disaster$	Dummy variable that equals 1 for treated industries after the disasters (including the year of the disaster); and 0 otherwise.
CSR_Score	Net score of CSR ratings, measured as total strengths minus total concerns in five social rating categories of KLD ratings data: community, diversity, employee relations, environment, and product.
$Strenghts$	Sum of total strengths in the five social rating categories of KLD ratings data.
$Concerns$	Sum of total concerns in the five social rating categories of KLD ratings data.
$Internal$	CSR_Score for diversity and employee relations.
$External$	CSR_Score for community, human rights, and environment.
AAC	Signed discretionary accruals, computed from performance-adjusted cross-sectional modified Jones model.
ABS_DA	Absolute value of discretionary accruals.
AB_CFO	Abnormal cash flows from operations.
AB_PROD	Abnormal production costs, where production costs are defined as the sum of cost of goods sold and the change in inventories.
AB_EXP	Abnormal discretionary expenses, where discretionary expenses are the sum of R&D expenses, advertising expenses, and SG&A expenses.
$COMB\_RAM$	$AB\_CFO - AB\_PROD + AB\_EXP$.
bogindex	Bog Index scores for 10-K filings (Bonsall et al. 2017). The Bog Index data is freely available (`https://kelley.iu.edu/bpm/activities/bogindex.html`).
Control variables	
$SIZE$	Natural logarithm of the market value of equity (MVE)
MB	Market-to-book equity ratio
ADJ_ROA	Industry-adjusted ROA, where ROA is measured as income before extraordinary items, scaled by lagged total assets
LEV	Long-term debt scaled by total assets
RD_INT	R&D intensity (R&D expense/net sales) for the year
AD_IND_INT	Advertising intensity for the two-digit SIC code industry for the year
CH	Cash holding ratio of cash and short-term investments to the book value of assets

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Variable	**Variable Definitions**
ROA	Ratio of income before extraordinary items to the book value of assets
$BIG4$	Dummy variable that takes the value of 1 if the firm is audited by a Big 4 auditor; 0 otherwise
AGE	log(1+#years since a firm appears in CRSP monthly file)
$BUSSEG$	log(1+# of business segments)
$GEOSEG$	log(1+# of geographic segments)
SI	Special items scaled by book value of assets
$NITEMS$	Log of number of non-missing items in Compustat as a proxy for financial complexity
SGA_AD	log(SG&A-advertising)
SGA_R	SG&A/revenue
Ind_Dir	Dummy variable that is based on the proportion of independent directors over the total size of the board (*prop_ind*). *Ind_Dir* takes the value of one if the firm exhibits a *prop_ind* beyond the median of its industry in 2009 (year before the disasters) and 0 otherwise.
$E-INDEX$	Dummy variable that is based on entrenchment index (E index) (Bebchuk et al. 2008). *E-INDEX* takes the value of one if the firm exhibits a E index beyond the median of its industry in 2009 (year before the disasters) and 0 otherwise.

APPENDIX 1.B: MSCI ESG KLD STATS

KLD data starts in 1991 and is based on the assessment of how well firms perform in environmental, social, and governance issues. KLD covers five universes (see Table A1[42]).

Table A1: KLD Universes

Data Set Universe	Time Series	Number of Firms**	Inclusion in Our Study
Universe A			
MSCI KLD 400 Social Index + MSCI USA Index	1991 - present	650	From 2003
Universe B			
Largest 1000 U.S. companies by market capitalization	2008-2013	1000 (*discounted**)	No
Universe C			
MSCI KLD 400 Social Index + 1000 Largest U.S. Companies	2001-2013	1100 (*discounted**)	No
Universe D			
MSCI USA IMI Index	2003-present	2400	Yes
Universe E			
Non-U.S. Universe	2013 - present	2600	No

* Universes B and C have been discounted as of STATS-2014 Data Set.
** Number of firms is an approximate average for the time series.

Universe A covers firms that are included in MSCI KLD 400 Social Index & MSCI USA index. Universe D covers the 3000 largest US firms measured by market capitalization and are not covered by Universe A. RiskMetrics acquired KLD in 2009 and Morgan Stanley Capital International (MSCI) acquired RiskMetrics in 2010. In 2010 the industry-based key issue rating model was introduced to KLD. Prior 2010 all of the positive ESG performance indicators were searched for all of the companies. Starting from 2010, all companies are assessed for limited set of industry specific positive ESG indicators. Thus, our results can be affected by the change in the methodology in 2010. We acknowledge this caveat as follows.

First, we apply differences-in-difference approach (DiD) which eliminates two main concerns. First, if the conclusion is done only based on the difference between treated and control groups in the post-disaster period. In this case, the final result may capture only the permanent difference between treatment and control. Second, if the conclusion is done only based on the difference between treatment group before and after the disaster. This result can be driven by the trends in the database. Thus, if in 2009 or (and) 2010 some methodological aspects of KLD were changed, this difference is captured by the DiD design.

[42] Table A1 is a partial reproduction of the table provided by WRDS and MSCI `https://wrds-www.wharton.upenn.edu/documents/1154/KLD-on-WRDS.pdf`

Second, we are consistent with the prior literature that uses KLD databases before and after 2010 and (or) 2011. Some selected examples are Flammer and Luo 2017 (1991-2013), Petrenko et al. 2016 (1997-2012) and Marano and Kostova 2016 (2007-2011).

APPENDIX 1.C: 2SLS Estimations

We perform IV estimation with *COMBINED_RAM* and *READABILITY* as dependent variables. The first stage for *COMBINED_RAM*:

$$\begin{aligned} EXTERNAL_{i,t+1} = {} & \beta_0 + \beta_1 CSR\_DISASTER_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 MB_{i,t-1} \\ & + \beta_5 LEV_{i,t-1} + \beta_6 CH_{i,t-1} + \beta_7 ABS\_DA_{i,t-1} + \beta_8 RD\_INT_{i,t-1} \\ & + \beta_9 AD\_IND\_INT_{i,t-1} + \beta_{10} GOVERNANCE_{i,t-1} + \beta_{11} BIG4_{i,t-1} \\ & + \beta_{12} FIRM\_AGE_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{A1}$$

The second stage for *COMBINED_RAM*:

$$\begin{aligned} RAM_{i,T} = {} & \beta_0 + \beta_1 f\_EXTERNAL\_hat_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 MB_{i,t-1} \\ & + \beta_5 LEV_{i,t-1} + \beta_6 CH_{i,t-1} + \beta_7 ABS\_DA_{i,t-1} + \beta_8 RD\_INT_{i,t-1} \\ & + \beta_9 AD\_IND\_INT_{i,t-1} + \beta_{10} GOVERNANCE_{i,t-1} + \beta_{11} BIG4_{i,t-1} \\ & + \beta_{12} FIRM\_AGE_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{A2}$$

where RAM is a proxy for real activities manipulation ($COMBINED\_RAM$) and T is $t+1$, $t+2$, or $t+3$.
The first stage for *READABILITY*:

$$\begin{aligned} EXTERNAL_{i,t+1} = {} & \beta_0 + \beta_1 CSR\_DISASTER_{i,t} + \beta_2 LEV_{i,t-1} + \beta_3 CH_{i,t-1} + \beta_4 EARN_{i,t-1} \\ & + \beta_5 RET_{i,t-1} + \beta_6 SIZE_{i,t-1} + \beta_7 BM_{i,t-1} + \beta_8 STD\_RET_{i,t-1} \\ & + \beta_9 AGE_{i,t-1} + \beta_{10} BUSSEG_{i,t-1} + \beta_{11} GEOSEG_{i,t-1} \\ & + \beta_{12} D\_EARN_{i,t-1} + \beta_{13} AFE_{i,t-1} + \beta_{14} AF_{i,t-1} + \beta_{15} lLOSS_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{A3}$$

The second stage for *READABILITY*:

$$\begin{aligned} READABILITY_{i,T} = {} & \beta_0 + \beta_1 f\_EXTERNAL\_hat_{i,t} + \beta_2 LEV_{i,t-1} + \beta_3 CH_{i,t-1} + \beta_4 EARN_{i,t-1} \\ & + \beta_5 RET_{i,t-1} + \beta_6 SIZE_{i,t-1} + \beta_7 BM_{i,t-1} + \beta_8 STD\_RET_{i,t-1} \\ & + \beta_9 AGE_{i,t-1} + \beta_{10} BUSSEG_{i,t-1} + \beta_{11} GEOSEG_{i,t-1} \\ & + \beta_{12} D\_EARN_{i,t-1} + \beta_{13} AFE_{i,t-1} + \beta_{14} AF_{i,t-1} + \beta_{15} lLOSS_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{A4}$$

where $READABILITY$ is *bogindex* and T is $t+1$ or $t+2$.

APPENDIX 1.D: Propensity Score Matching

Table A2: Summary statistics for treated and matched control group

	Unmatched	Mean			%reduct	t-test	
Variable	Matched	Treated	Control	%bias	| *bias* |	t	*p*> | *t* |
CSR_SCORE	U	-0.49018	-0.23177	-54.4		-5.68	0.000
	M	-0.49018	-0.50147	2.4	95.6	0.19	0.846
SIZE	U	7.5982	6.7341	53		6.69	0.000
	M	7.9053	7.974	-4.2	92.1	-0.36	0.719
MB	U	2.2929	2.8058	-18.9		-1.96	0.05
	M	2.2013	2.3128	-4.1	78.3	-0.43	0.665
LEV	U	0.30454	0.19999	58		6.15	0.000
	M	0.30569	0.31861	-7.2	87.6	-0.66	0.507
ROA	U	0.00522	0.00387	1		0.12	0.907
	M	0.01705	0.01367	2.6	-150.1	0.3	0.767
CH	U	0.0479	0.21814	-108.8		-10.18	0.000
	M	0.04214	0.05115	-5.8	94.7	-1.17	0.242

This table reports summary statistics for treated and match control group based on single nearest-neighbour (without caliper), 1-to-1 matching without replacement. The nearest neighbor is calculated based on six firm-level characteristics: CSR_SCORE, size ($SIZE$), market-to-book (MB), leverage ratio (LEV), return on asset (ROA), and cash holdings (CH). Matching variables are computed as average in the three years preceding the disasters. A bias before and after matching is calculated for each variable and the change in this bias is stated. This bias is defined as the difference of the mean values of the treatment group and the (not matched / matched) non treatment group, divided by the square root of the average sample variance in the treatment group and the not matched non treatment group. Variables are defined in Appendix 1.A.

Figure A2: Dot graph of covariate balance

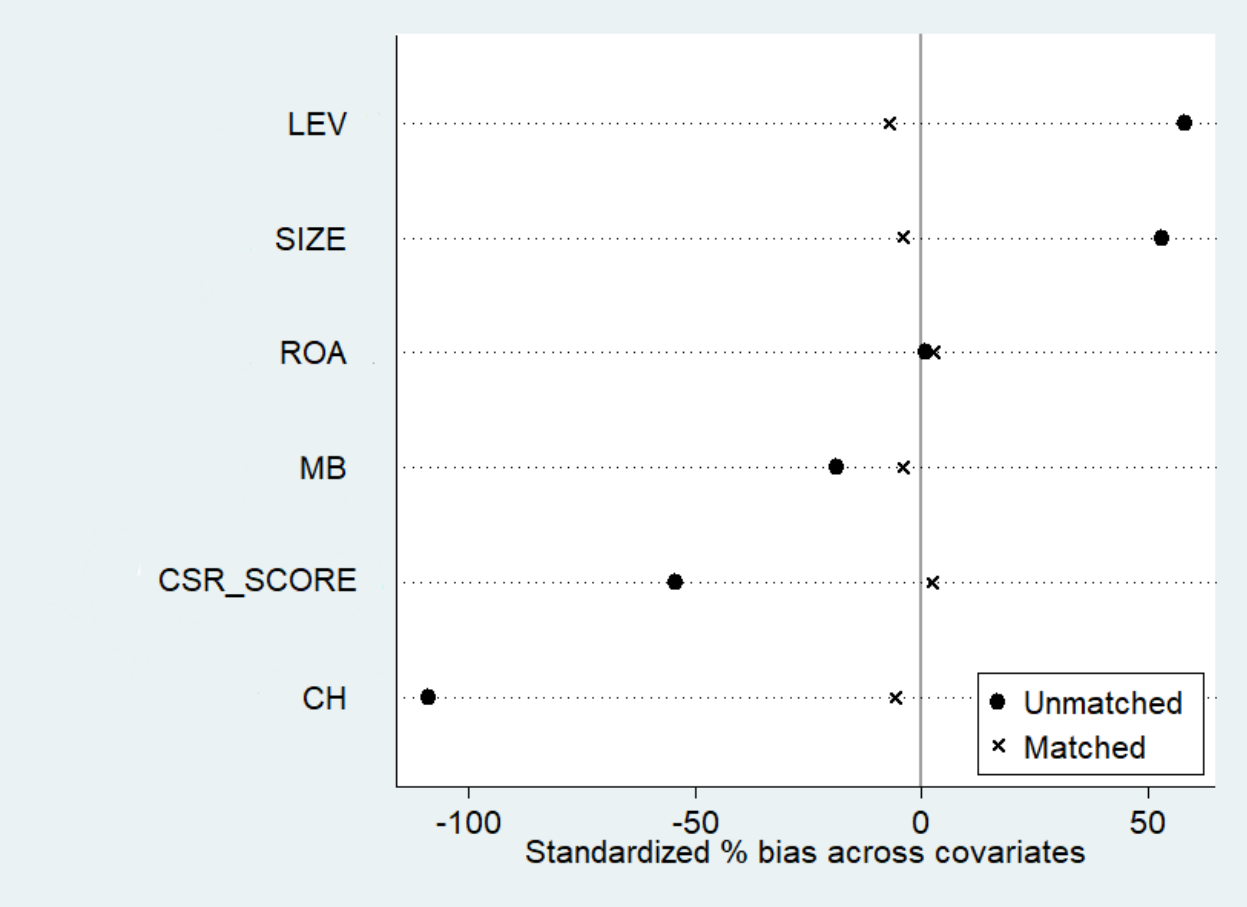


Table A3: PSM Sample. CSR in the post-disaster period

VARIABLES	(1) CSR_Score	(2) External	(3) Internal	(4) f_CSR_Score	(5) f_External	(6) f_Internal	(7) f2_CSR_Score	(8) f2_External	(9) f2_Internal
CSR_Disaster	0.218	0.245	-0.0856	0.284	0.341*	-0.0446	0.479	0.464	0.207
	(0.657)	(0.258)	(0.285)	(0.597)	(0.173)	(0.320)	(0.480)	(0.273)	(0.418)
l_SIZE	-0.221	-0.105	-0.0548	-0.213	-0.0521	-0.0766	-0.269	-0.0255	-0.0890
	(0.159)	(0.0785)	(0.113)	(0.201)	(0.0831)	(0.143)	(0.186)	(0.0872)	(0.142)
l_ROA	0.923	0.512	0.138	2.306***	0.821	0.808**	2.562***	0.352	1.201***
	(0.603)	(0.519)	(0.298)	(0.805)	(0.582)	(0.317)	(0.775)	(0.373)	(0.373)
l_MB	0.00166	0.0106	-0.00970	-0.00169	0.00653	-0.0129	0.0110	0.0104	-0.0109
	(0.0104)	(0.00985)	(0.0111)	(0.00940)	(0.0109)	(0.00837)	(0.0180)	(0.0157)	(0.00913)
l_LEV	-1.368**	-0.522	-0.873**	-0.816	-0.473	-0.522	-0.454	-0.526	-0.369
	(0.610)	(0.470)	(0.365)	(0.648)	(0.505)	(0.329)	(0.731)	(0.533)	(0.387)
l_CH	0.180	0.205	0.0833	0.838	0.209	0.715	2.140**	0.305	1.857***
	(0.965)	(0.483)	(0.679)	(0.890)	(0.633)	(0.683)	(0.920)	(0.813)	(0.670)
Constant	1.333	0.447	0.711	0.845	-0.114	0.661	0.702	-0.419	0.542
	(1.156)	(0.535)	(0.821)	(1.412)	(0.526)	(1.021)	(1.342)	(0.634)	(1.110)
Observations	2,583	2,583	2,583	2,305	2,305	2,305	2,032	2,032	2,032
Adj. R-sq.	0.543	0.499	0.610	0.557	0.503	0.625	0.571	0.505	0.631
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the impact of CSR-disasters on CSR performance. For columns (1)-(3) the measures of CSR (*CSR_SCORE*, *EXTERNAL*, or *INTERNAL*) are in t, for columns (4)-(6) in $t+1$, and for columns (7)-(9) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table A4: PSM Sample. CSR in the post-disaster period depending on pre-disaster CSR

VARIABLES	(1) CSR_Score	(2) External	(3) Internal	(4) f_CSR_Score	(5) f_External	(6) f_Internal	(7) f2_CSR_Score	(8) f2_External	(9) f2_Internal
				FULL SAMPLE					
CSR_DISASTER	0.218	0.245	-0.0856	0.284	0.341*	-0.0446	0.479	0.464	0.207
	(0.657)	(0.258)	(0.285)	(0.597)	(0.173)	(0.320)	(0.480)	(0.273)	(0.418)
Observations	2,583	2,583	2,583	2,305	2,305	2,305	2,032	2,032	2,032
				CSR < P(50)					
CSR_DISASTER	1.127	0.608***	0.368	1.355**	0.742***	0.513	1.629***	0.803*	0.923
	(0.704)	(0.199)	(0.393)	(0.649)	(0.192)	(0.448)	(0.546)	(0.464)	(0.599)
Observations	1,917	1,917	1,917	1,714	1,714	1,714	1,514	1,514	1,514
				CSR ≥ P(50)					
CSR_DISASTER	-0.669	-0.102	-0.536**	-0.763	-0.0383	-0.602***	-0.649*	0.137	-0.496**
	(0.564)	(0.311)	(0.195)	(0.478)	(0.212)	(0.191)	(0.355)	(0.171)	(0.229)
Observations	1,970	1,970	1,970	1,757	1,757	1,757	1,547	1,547	1,547
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the impact of CSR-disasters on CSR performance depending on pre-disaster CSR performance. For columns (1)-(3) the measures of CSR (*CSR_SCORE*, *EXTERNAL*, or *INTERNAL*) are in t, for columns (4)-(6) in $t+1$, and for columns (7)-(9) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table A5: PSM Sample. Accrual-based earnings management and RAM in the post-disaster period

VARIABLES	(1) f_External	(2) f2_ABS_DA	(3) f3_ABS_DA	(4) f4_ABS_DA	(5) f5_ABS_DA	(6) f_External	(7) f_RAM	(8) f2_RAM	(9) f3_RAM
CSR_DISASTER	0.197***					0.198***			
	(0.0586)					(0.0597)			
f_EXTERNAL_hat		0.0249	0.0319	0.0704***	0.133***		-0.195*	-0.249**	-0.198**
		(0.0150)	(0.0190)	(0.0253)	(0.0439)		(0.112)	(0.117)	(0.0906)
COMBINED_RAM	0.00162	-0.00431	-0.0188**	-0.0275***	0.00806				
	(0.0819)	(0.00935)	(0.00732)	(0.00970)	(0.0118)				
RD_INT	-0.0326	-0.156***	-0.0558**	0.0241	-0.0474	-0.0443	-0.144***	-0.221	-0.174
	(0.0339)	(0.0430)	(0.0235)	(0.0206)	(0.0484)	(0.0367)	(0.0325)	(0.231)	(0.172)
AD_IND_INT	1.690	0.155	0.301	0.234	0.199	1.748	0.156	0.751	0.920
	(1.358)	(0.275)	(0.339)	(0.334)	(0.533)	(1.366)	(1.842)	(1.035)	(1.254)
GOVERNANCE	0.0514***	-0.00111	-0.000511	-0.00151	-0.00784	0.0517***	0.0190**	0.0176**	0.0116
	(0.0158)	(0.00157)	(0.00181)	(0.00351)	(0.00518)	(0.0155)	(0.00831)	(0.00794)	(0.00792)
BIG4	0.150*	-0.00705	0.00372	-0.0153	-0.0271	0.148*	-0.00661	0.0877***	0.0387
	(0.0860)	(0.0104)	(0.00795)	(0.00991)	(0.0169)	(0.0866)	(0.0608)	(0.0295)	(0.0361)
FIRM_AGE	-0.126***	-0.0122	0.00188	0.00113	0.0115*	-0.125***	-0.0316	-0.0128	-0.0343*
	(0.0327)	(0.00860)	(0.0112)	(0.0123)	(0.00586)	(0.0330)	(0.0276)	(0.0303)	(0.0193)
ABS_DA						0.212	0.396***	0.236	-0.0337
						(0.163)	(0.129)	(0.169)	(0.147)
Observations	1,617	1,718	1,521	1,334	1,146	1,617	1,774	1,719	1,522
Adjusted R-squared	0.521	0.262	0.295	0.292	0.282	0.521	0.747	0.750	0.764
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

The Table shows two-stage least square regression results. Columns (1) and (6) show the first-stage regression results for *ABS_DA* and *RAM* based on Eq. (3). Second-stage results are presented in columns (2)-(5) and (7)-(9) where CSR performance (*f_EXTERNAL*) is replaced with the predicted values estimated from the first-stage regressions (*f_EXTERNAL_hat* based on Eq. (4). For columns (2) and (5) the measure of *ABS_DA* is in $t+2$, $t+3$, $t+4$, and $t+5$, respectively. For columns (7)-(9) the measure of *RAM* is in $t+1$, $t+2$, and $t+3$, respectively. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

APPENDIX 1.E: ASSET 4

KLD data is widely used in prior literature to study the relation between CSR and performance (Kim et al. 2012; Di Giuli and Kostovetsky 2014; Becchetti et al. 2015; Flammer 2015; Khan et al. 2016; El Ghoul and Karoui 2017; Lins et al. 2017; Feng et al. 2018). The KLD database has a number of advantages over other sources of CSR data, as it covers a large number of U.S. firms and provides information about different dimensions of CSR, indicating strengths and concerns per dimension.

Even though KLD suits our research agenda, to enhance the robustness of our results, we repeat our main analysis (eq.1.1) using ASSET4 to construct an alternative measure for CSR performance. Table A7 presents the results for selected ASSET4 dimensions.

A split sample analysis based on high and low CSR performance (according to pre-disaster *ESGCombinedScore* dimension) supports our main hypothesis. Table A7 shows that firms with low CSR performance, in fact, do improve their CSR performance in the post-disaster period. A number of mixed untabulated results are worth mentioning. First, in the post-disaster period, treated firms marginally improve their *emission score*, however, *environmental innovation score* is either insignificant or negative. Second, *community* and *product responsibility scores* are marginally significant, while *workforce* and *human rights scores* are insignificant. Overall, despite the relative coherence of the conclusions based on KLD and ASSET4, the results from Table A7 need to be interpreted with caution. We briefly discuss the main caveats below.

First, as shown by Chatterji et al. 2016, KLD and ASSET4[43] do not converge even after adjusting for explicit differences in the definition of CSR accepted in various ratings. Second, KLD and ASSET4 do not have a one-to-one match between the CSR dimensions. In our main analysis, we construct *EXTERNAL*, as our main proxy for CSR, while replicating this dimension based on ASSET4, remains an empirical question. Third, given the time span that we use in this paper, we do not achieve a sufficiently large sample when merging the databases KLD, ASSET4, and those for the control variables. Thus, we cannot replicate our analyses with ASSET4 on the same sample of firms that we used in our baseline results. Therefore, our sample here is based only on a match between ASSET4 and control datasets. In other words, the majority of firms in our main and ASSET4 analysis are different. Table A6 shows summary statistics for selected variables based on ASSET4 sample. Firms covered by ASSET4 are bigger, more profitable, and have lower cash holdings. With these caveats in mind, our analysis based on KLD and ASSET4 both provide meaningful results and overall support the main hypothesis of this paper.

[43] as well as FTSE4Good, Innovest, Calvert, and DJSI

Table A6: Descriptive statistics of selected variables for ASSET4 sample

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
SIZE	5167	8.81	1.332	7.945	8.676	9.65
MB	5167	3.891	5.019	1.775	2.849	4.567
ADJ_ROA	5172	.058	.11	.03	.064	.107
LEV	5164	.246	.179	.12	.231	.348
RD_INT	5167	.104	.37	0	.013	.07
AD_IND_INT	5167	.012	.027	0	0	.009
CH	5171	.152	.176	.028	.086	.207
ROA	5172	.051	.097	.027	.059	.096
BIG4	5172	.977	.149	1	1	1
SGA_AD	4377	6.601	1.363	5.719	6.518	7.441
SGA_R	4375	.273	.212	.127	.228	.354

Table A7: Selected dimensions of ASSET4 in the post-disaster period depending on pre-disaster CSR

VARIABLES	(1) ESGS	(2) Manag	(3) Shar	(4) f_ESGS	(5) f_Manag	(6) f_Shar	(7) f2_ESGS	(8) f2_Manag	(9) f2_Shar
				FULL SAMPLE					
CSR_DISASTER	-0.00163	0.0270	0.0513***	-0.0138	-0.00806	0.0528***	-0.0244***	-0.0302	0.0230
	(0.0122)	(0.0268)	(0.0162)	(0.00864)	(0.0218)	(0.00800)	(0.00671)	(0.0182)	(0.0148)
	4,322	4,322	4,322	4,258	4,258	4,258	4,207	4,207	4,207
				CSR < P(50)					
CSR_DISASTER	0.0520**	0.0955***	0.106***	0.0287	0.0388*	0.0922***	-0.00423	-0.0218	0.0414**
	(0.0208)	(0.0248)	(0.0215)	(0.0163)	(0.0197)	(0.0131)	(0.0132)	(0.0159)	(0.0156)
Observations	1,912	1,912	1,912	1,880	1,880	1,880	1,854	1,854	1,854
				CSR ≥ P(50)					
CSR_DISASTER	-0.0440***	-0.0273	0.00916	-0.0479***	-0.0460*	0.0241**	-0.0417***	-0.0380	0.0121
	(0.00945)	(0.0307)	(0.0167)	(0.00732)	(0.0251)	(0.0112)	(0.00869)	(0.0269)	(0.0211)
Observations	2,410	2,410	2,410	2,378	2,378	2,378	2,353	2,353	2,353
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table shows the impact of CSR-disasters on CSR performance depending on pre-disaster CSR performance for ASSET4 sample. *ESCS* -ESG Combined Score, *Manag* - Management Score, and *Shar* - Shareholder Score are selected ASSET4 dimensions. For columns (1)-(3) the measures of CSR (*CSR_Score*, *External*, or *Internal*) are in t, for columns (4)-(6) in $t+1$, and for columns (7)-(9) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

APPENDIX 1.F: Conference Calls and Google Trends

The main premise of this paper is that other firms in the treated industries are negatively affected by CSR-disasters. Even though we draw from the prior literature on the negative spillover effect (Desai 2011; Diestre and Rajagopalan 2014; Liang and Renneboog 2017), in this section, we provide additional suggestive evidence on this assumption. First, we present conference call transcripts for selected firms that operate in the treated industries (Table A8). These transcripts support the idea that investors are concerned about other firms' risk profile and the latter's preparedness for such disasters. During their conference calls, mangers, in fact, do discuss and receive questions about the likelihood that their firms may have had the same problem and explain how their firms are different form the firm that is involved in the disaster. Overall, the evidence from these conference calls additionally supports the assumption that other firms in the treated industries are also under suspicion of lacking sustainability.

Second, we provide additional evidence that stakeholders, other than sophisticated investors, are also concerned about the disasters and this concern is not firm-specific. We provide some descriptive evidence on Google search inquiries around the disasters. Figure A1 shows popularity dynamics inquiries for each of the events, with or without mentioning of the "guilty" firms. The Y-axis is ranged from 0 to 100, where 100 indicates the highest level of attention to the event. Figure A1 suggests that stakeholders' concerns are more about the disasters in general, rather than specific to the firm. It is especially clear in the case of San Bruno explosion. The popularity level of the request indicating the company that is involved in this disaster (PG&E) is indistinguishably small comparing to the level of interest in the disaster itself. Again, this example indirectly supports the idea that firms other than the guilty ones also have incentives to react to the disasters. Of course, this evidence needs to be interpreted with caution, as the same inquiry can be written in multiple ways, which can affect the popularity of the inquiry.

Table A8: Conference Calls for Selected Firms

Edited Transcript of Southern Co earnings conference call or presentation Wednesday, April 27, 2011 at 5:00:00pm GMT
Tom Fanning, Southern Company - Chairman, President, CEO

Turning now to an event which has focused the world's attention on nuclear energy, I would like to offer some comments on how we believe that event at the Fukushima plant in Japan might impact the nation's existing and future fleet of nuclear power plants. [...] No doubt, there will be lessons learned from the tragic events at Fukushima that will almost certainly apply to the current fleet of nuclear generation in America. Certainly, we expect there will be a thorough, thoughtful review of those facilities located in seismically-sensitive areas, plants along coastal zones and perhaps other design modifications, particularly with older plants.

Edited Transcript of Exelon Corp conference call or presentation Thursday, March 24, 2011 at 1:30:00pm GMT

John Rowe, Exelon Corporation - Chairman, CEO

The earthquake, the tsunami, and the subsequent reactor breakdowns in Japan have captured the attention of the entire world. Companies like Exelon that are heavily involved in the nuclear industry have been following the situation with the reactors as closely as we can. We have daily conference calls with our nuclear management, we work closely with NEI, we are doing everything we can to understand these events as intimately as possible. [...](I)t is a very serious event, indeed, and we at Exelon are treating it accordingly. We have begun the lesson learned process, and the root cause analysis, and we are attempting to apply all that we can learn to our own power plants.

[...] (W)e have begun focused safety reviews since the event, and our reviews to date continue to assure us that our plants are safe. Nonetheless, we feel we owe you, our shareholders, our customers, our employees, and our neighbors, that we continue to ask the question and we do it regularly.

[...] Chip Pardee has been working closely with NEI leadership to represent the industry and to coordinate our responses with the Chief Nuclear Officers of our peer companies.

Chris Crane, Exelon Corporation - President and COO

[...] Let me talk now about the comparison and the contrast of the circumstances in Japan to the Exelon nuclear plants. We do have some plants in our fleet that are similar in design and containment to those in Japan.

[...] In September 2010, the NRC issued an information notice that provided an update of the NRC's activities in seismic research. They released a risk – a safety risk assessment that summarizes the work that they have performed to date. This information is used to evaluate potential impacts on plant safety, and to plan any future regulatory actions. Our Units were last reviewed in 2010.

Hugh Wynne, Sanford C. Bernstein& Company, Inc. - Analyst

It seems to me that there, in all likelihood, will be some Japanese and potentially international inquiry into the failures at the Fukushima Daiichi plant. And when those lessons learned are applied in the US, I suspect that the key focus will be plant blackouts and the ability to maintain the supply of cooling water to reactors and spent fuel pumps under those conditions. And I don't think that the utility – that the NRC or utility regulators will limit their assessment to the causes that triggered the plant blackout in Japan.

[...] I don't think the focus will be solely on tsunamis or earthquakes. They will think about other circumstances that could cause plant blackouts like a terrorist attack or a cyber

attack [...]. My question then is across the entire US fleet, can we draw parallels from Fukushima Daiichi regarding potential risks that could be – that could parallel those that have developed in Japan due to plant blackouts? Are there steps that could be (background noise) or – yes, could be identified today to mitigate those risks? Is there any way in which we can begin to put a range of cost around potential [uprates] to mitigate risks?

John Rowe, Exelon Corporation - Chairman, CEO

[...] First, we agree with your sobering far-reaching question. We think that's exactly what will happen. And thus, our folks have started to say, okay, this will cause questions to be asked about the entire spectrum of what we call the design basis of the plants. And we've already hired a team of outside experts to help us prepare for just that. [...] They will, of course, look at the things that you mentioned afresh – terrorism, which of course they have done, after 9/11. Cyber attacks, the one you mentioned, has already been the subject of inquiry from federal regulators.

[...] Other environmental effects, and it's, frankly, impossible for us to put meaningful numbers on what that can be. I mean, we believe that this will cost us some more money, but we can't put numbers and zeros on it, let alone numbers. Yet. Because we simply don't know what changes are being talked about for what plants, and indeed, no one knows at the moment, because the regulator hasn't fully started this.

Edited Transcript of Devon Energy Corp presentation Thursday, May 27, 2010 at 8:00:00pm GMT

Thomson Reuters Media

Have you had – since the Gulf spill, have you gone back and dotted your own I's and crossed your own T's to make sure everybody's doing exactly what they are supposed to be doing?

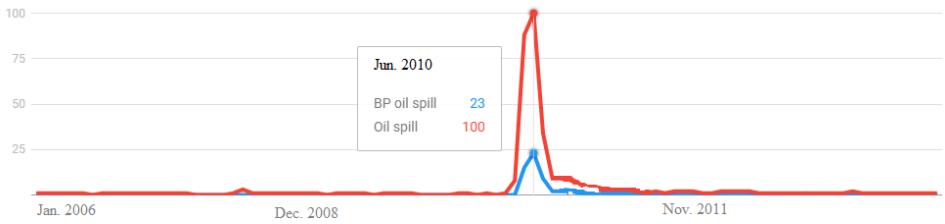
John Richels, Devon Energy Corporation - President

[...] It's been a big focus of ours to be absolutely as safe as we can, and as responsible as we can. And so we are pretty confident that we were doing before and since what we need to in order to run our operations in the most responsible fashion.

Unidentified Company Representative

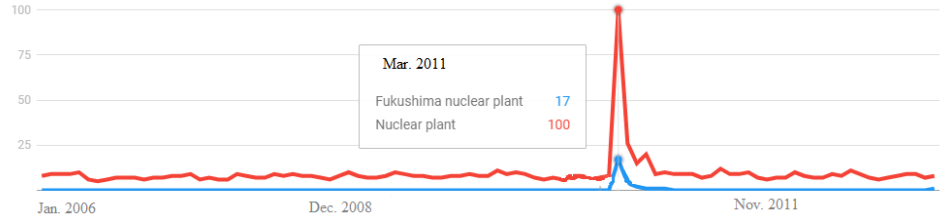
[...] (Y)ou may have seen on our website – last year Devon won the MMS Safe award for operations in the Gulf of Mexico for a large company. That's an offshore example, but that's an illustration of – just the way we look at safety Company-wide.

Figure A1: Google Trends
Source: `https://trends.google.com/trends/?geo=US`



(a) EVENT I: BP Oil Spill. Y-axis is ranged from 0 to 100, where 100 means the highest attention to the event.

(b) EVENT II: San Bruno Gas Pipeline Explosion. Y-axis is ranged from 0 to 100, where 100 means the highest attention to the event.



(c) EVENT III: Fukushima Daiichi Nuclear Disaster. Y-axis is ranged from 0 to 100, where 100 means the highest attention to the event.

Figure 1.1: Probability Density Function of The Placebo Coefficients

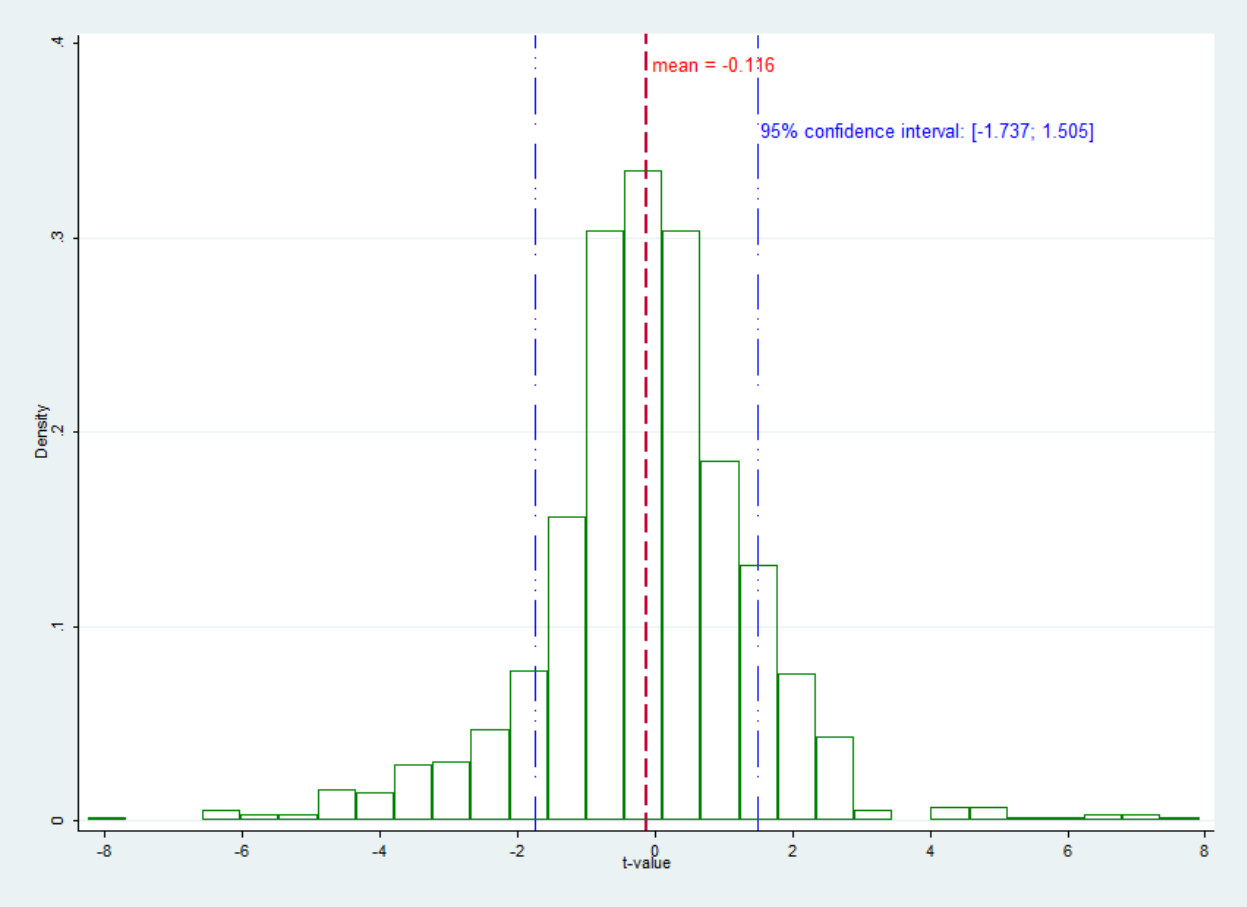


Figure 1.2: Evolution of Average *EXTERNAL* in Treatment and Control Group
2010 is assigned as treatment year for the control group. Treatment group (EXT_treat) - industries with sic2 = 13, 29, and 49. Control group (EXT_contr)- all industries except sic2 = 13, 29, and 49. *time* - year relative to treatment.

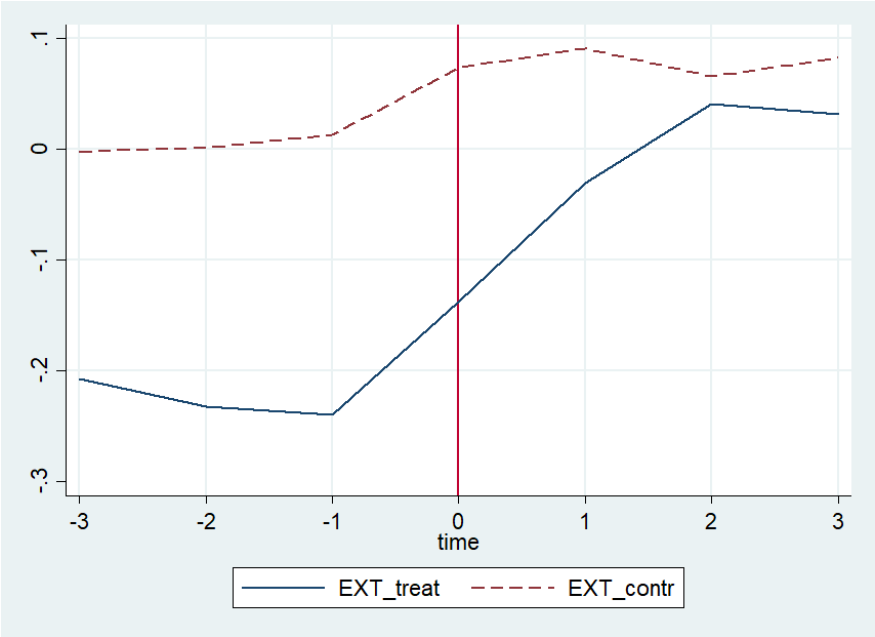


Figure 1.3: Pattern of the counter-factual treatment effects on *EXTERNAL*
This figure displays regression coefficient estimates and two-tailed 90%, 95%, and 99% confidence intervals based on standard errors clustered at the sic2 level. To map out the pattern in the counter- factual treatment effects we include in Eq. 1.1 indicators for every year period in the sample except 2009, which serves as the benchmark period (i.e., the coefficient is constrained to equal zero). In these specification, we measure the pattern in the counter-factual treatment effects relative to the period immediately prior the disasters.

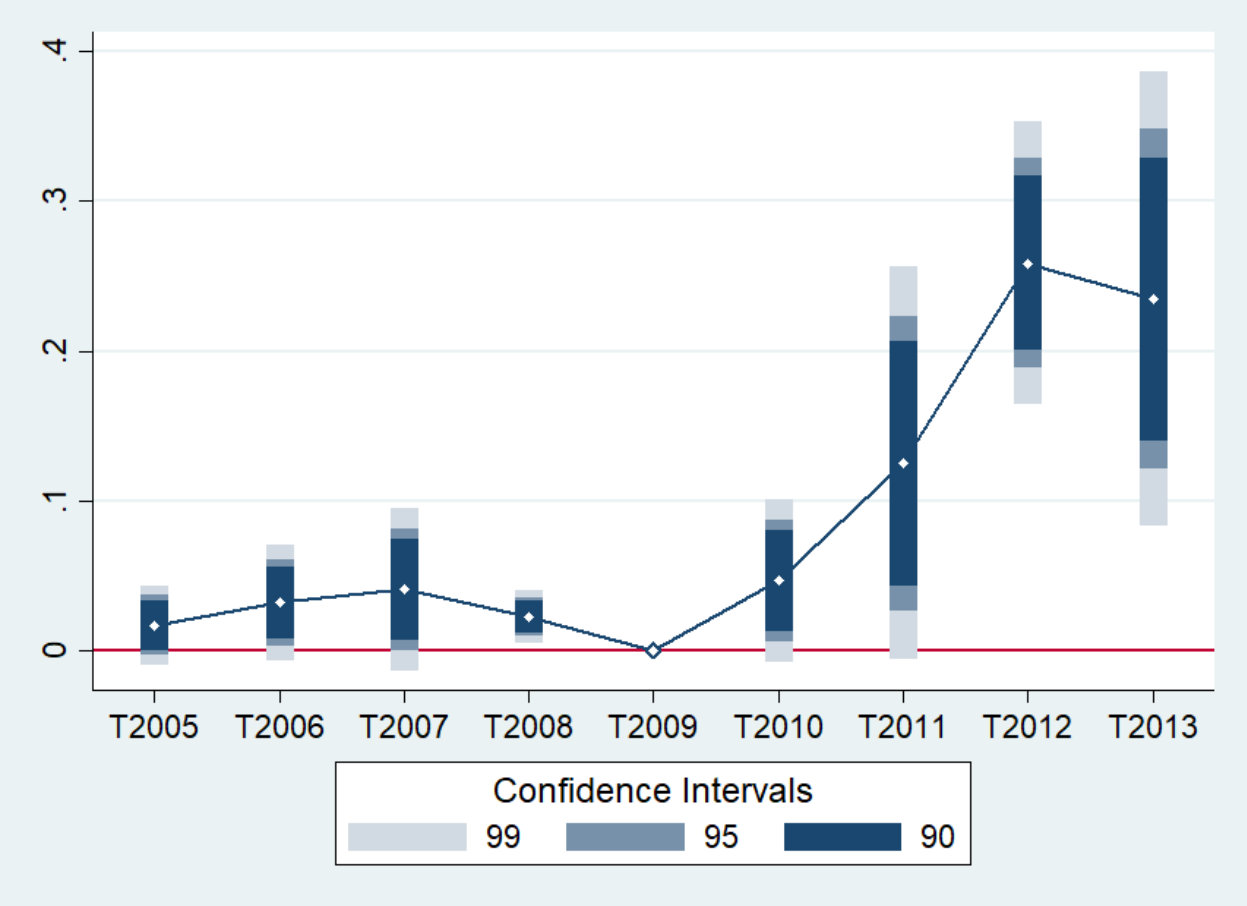


Table 1.1: Sample Description: Distribution of Firm-Year Observations by Industry

Two-Digit SIC	# of Obs.	% of Sample	Cumulative Percent
10	71	0.44	0.44
13	699	4.29	4.73
15	142	0.87	5.6
16	68	0.42	6.02
20	446	2.74	8.76
23	181	1.11	9.87
24	80	0.49	10.36
25	115	0.71	11.07
26	204	1.25	12.32
27	197	1.21	13.53
28	1,851	11.37	24.9
29	89	0.55	25.45
30	162	1	26.44
31	10	0.06	26.5
32	95	0.58	27.09
33	261	1.6	28.69
34	241	1.48	30.17
35	1,173	7.2	37.37
36	1,422	8.73	46.11
37	536	3.29	49.4
38	1,183	7.27	56.67
39	161	0.99	57.66
42	166	1.02	58.68

Continued on next page

Table 1.1 *Continued from previous page*

Two-Digit SIC	# of Obs.	% of Sample	Cumulative Percent
44	11	0.07	58.74
45	135	0.83	59.57
48	573	3.52	63.09
49	876	5.38	68.47
50	378	2.32	70.79
51	211	1.3	72.09
53	163	1	73.09
54	110	0.68	73.77
55	161	0.99	74.76
56	282	1.73	76.49
57	19	0.12	76.6
58	291	1.79	78.39
59	332	2.04	80.43
72	10	0.06	80.49
73	2,160	13.27	93.76
78	21	0.13	93.89
79	204	1.25	95.14
80	349	2.14	97.29
82	51	0.31	97.6
87	381	2.34	99.94
99	10	0.06	100
Total	16,281	100	

Table 1.2: Descriptive statistics of selected variables

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
CSR_Score	16281	-.205	.546	-.55	-.25	0
External	16281	.005	.262	0	0	0
Internal	16281	-.204	.402	-.5	-.222	0
ABS_DA	16101	.053	.062	.015	.034	.066
AB_CFO	16281	0	.097	-.045	-.001	.047
AB_PROD	16281	-.001	.173	-.089	.001	.085
AB_EXP	16281	-.003	.186	-.095	-.001	.061
COMBINED_RAM	16281	-.002	.356	-.193	-.021	.17
SIZE	16276	7.132	1.533	6.002	6.929	8.061
MB	16274	3.104	4.232	1.464	2.26	3.68
ADJ_ROA	16281	.031	.15	.01	.05	.096
LEV	16247	.207	.201	.01	.176	.325
RD_INT	16202	.163	.717	0	.005	.08
AD_IND_INT	16202	.011	.026	0	0	.008
CH	16281	.203	.213	.041	.123	.294
ROA	16281	.021	.141	.009	.046	.085
BIG4	16281	.897	.304	1	1	1
FIRM_AGE	16281	2.696	.897	2.079	2.708	3.367
SGA_AD	14560	5.267	1.447	4.241	5.117	6.162
SGA_R	14497	.296	.249	.128	.235	.386

This table shows descriptive statistics of the main sample used in this analysis. The number of observations from control variables vary according to the test described in every table from here on. This table shows the number of observations used in the main analysis from. All variables are defined in Appendix 1.A.

Table 1.3: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)CSR_Score	1.000											
(2)ABS_DA	-0.070	1.000										
	(0.000)											
(3)AB_CFO	0.093	-0.059	1.000									
	(0.000)	(0.000)										
(4)AB_PROD	-0.123	0.024	-0.464	1.000								
	(0.000)	(0.002)	(0.000)									
(5)AB_EXP	0.098	0.098	-0.045	-0.580	1.000							
	(0.000)	(0.000)	(0.000)	(0.000)								
(6)COMBINED_RAM	0.135	0.022	0.481	-0.915	0.786	1.000						
	(0.000)	(0.004)	(0.000)	(0.000)	(0.000)							
(7)SIZE	0.379	-0.200	0.174	-0.125	0.075	0.147	1.000					
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
(8)MB	0.070	0.085	0.077	-0.115	0.142	0.149	0.133	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
(9)LEV	-0.027	-0.070	-0.110	0.062	-0.053	-0.089	0.108	-0.067	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(10)CH	-0.000	0.275	0.012	-0.074	0.182	0.134	-0.210	0.191	-0.358	1.000		
	(0.961)	(0.000)	(0.101)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
(11)ROA	0.093	-0.333	0.457	-0.233	-0.092	0.196	0.309	-0.006	-0.105	-0.318	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.442)	(0.000)	(0.000)		
(12)FIRM_AGE	0.164	-0.193	0.034	-0.001	-0.076	-0.028	0.315	-0.090	0.048	-0.266	0.152	1.000
	(0.000)	(0.000)	(0.000)	(0.939)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Table shows the Pearson correlations coefficients and their p-value in parentheses.
All variables are defined in Appendix 1.A.

Table 1.4: CSR in the post-disaster period

VARIABLES	(1) CSR_Score	(2) External	(3) Internal	(4) f_CSR_Score	(5) f_External	(6) f_Internal	(7) f2_CSR_Score	(8) f2_External	(9) f2_Internal
CSR_DISASTER	0.147	0.115***	0.0536	0.154	0.165***	0.0384	0.153	0.217***	0.0761
	(0.110)	(0.0207)	(0.0531)	(0.132)	(0.0257)	(0.0675)	(0.128)	(0.0754)	(0.101)
SIZE	-0.000430	-0.0121*	0.00221	0.00653	-0.000604	0.000846	-0.00965	0.00363	-0.0108
	(0.0150)	(0.00614)	(0.0107)	(0.0157)	(0.00687)	(0.0115)	(0.0154)	(0.00908)	(0.0118)
ROA	0.0422	0.0267	0.0251	0.121*	0.0160	0.0926**	0.102*	-0.0150	0.0784**
	(0.0462)	(0.0280)	(0.0312)	(0.0609)	(0.0250)	(0.0422)	(0.0511)	(0.0208)	(0.0373)
MB	-0.000695	0.000464	-0.00124*	-0.00145	-0.000114	-0.000738	0.000252	0.000808	8.19e-05
	(0.00112)	(0.000578)	(0.000692)	(0.00103)	(0.000827)	(0.000757)	(0.00113)	(0.000714)	(0.000922)
LEV	0.0408	0.0218	-0.0141	0.0531	0.00962	-0.00198	0.0764	0.0191	0.00730
	(0.0436)	(0.0262)	(0.0311)	(0.0473)	(0.0279)	(0.0300)	(0.0522)	(0.0346)	(0.0304)
CH	0.0286	0.0453**	0.00189	0.00823	0.0159	0.00521	0.0913	0.0167	0.0585
	(0.0766)	(0.0208)	(0.0603)	(0.0776)	(0.0218)	(0.0587)	(0.0774)	(0.0343)	(0.0528)
Constant	-0.184*	0.0221	-0.155**	-0.304***	-0.0743*	-0.204**	-0.253**	-0.0841	-0.156**
	(0.102)	(0.0370)	(0.0725)	(0.103)	(0.0424)	(0.0765)	(0.0955)	(0.0607)	(0.0761)
Observations	16,281	16,281	16,281	12,968	12,968	12,968	10,591	10,591	10,591
Adjusted R-squared	0.589	0.482	0.590	0.605	0.491	0.608	0.616	0.503	0.618
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table shows the impact of CSR-disasters on CSR performance. For columns (1)-(3) the measures of CSR (*CSR_Score*, *External*, or *Internal*) are in t, for columns (4)-(6) in $t+1$, and for columns (7)-(9) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table 1.5: CSR in the post-disaster period depending on pre-disaster CSR

VARIABLES	(1) CSR_Score	(2) External	(3) Internal	(4) f_CSR_Score	(5) f_External	(6) f_Internal	(7) f2_CSR_Score	(8) f2_External	(9) f2_Internal
				FULL SAMPLE					
CSR_DISASTER	0.147	0.115***	0.0536	0.154	0.165***	0.0384	0.153	0.217***	0.0761
	(0.110)	(0.0207)	(0.0531)	(0.132)	(0.0257)	(0.0675)	(0.128)	(0.0754)	(0.101)
Observations	16,281	16,281	16,281	12,968	12,968	12,968	10,591	10,591	10,591
				CSR < P(50)					
CSR_DISASTER	0.239*	0.213***	0.0877	0.282*	0.290***	0.0882	0.273**	0.350***	0.143
	(0.134)	(0.0305)	(0.0750)	(0.146)	(0.0429)	(0.0841)	(0.119)	(0.127)	(0.127)
Observations	8,721	8,721	8,721	7,114	7,114	7,114	5,922	5,922	5,922
				CSR ≥ P(50)					
CSR_DISASTER	0.0696	0.0388**	0.0212	0.0498	0.0691***	-0.00573	0.0677	0.120***	0.0202
	(0.106)	(0.0148)	(0.0427)	(0.144)	(0.0175)	(0.0607)	(0.161)	(0.0133)	(0.0905)
Observations	7,560	7,560	7,560	5,854	5,854	5,854	4,669	4,669	4,669
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table shows the impact of CSR-disasters on CSR performance depending on pre-disaster CSR performance. For columns (1)-(3) the measures of CSR (*CSR_Score*, *External*, or *Internal*) are in t, for columns (4)-(6) in $t+1$, and for columns (7)-(9) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table 1.6: Accruals-based earnings management and readability in the post-disaster period.
Table shows two-stage least square regression results. Columns (1) and (4) show the first-stage regression results for *ABS_DA* and *bogindex* based on Eq. (3). Second-stage results are presented in columns (2)-(3) and (5)-(6) where CSR performance (*f_External*) is replaced with the predicted values estimated from the first-stage regressions (*f_External_hat*) based on Eq.(4). For columns (2) and (3) the measure of *ABS_DA* is in $t+2$ and $t+3$, respectively. For columns (5) and (6) the measure of *bogindex* is in $t+1$ and $t+2$, respectively. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
CSR_DISASTER	0.155***			0.127**		
	(0.0349)			(0.0481)		
f_External_hat		0.0594***	0.0654***		7.549*	9.385**
		(0.0174)	(0.0215)		(4.089)	(4.534)
SIZE	0.0104	-0.00248	-0.00117	0.00252	-0.0225	0.0983
	(0.00842)	(0.00191)	(0.00189)	(0.00658)	(0.0805)	(0.0822)
MB	-0.000423	9.16e-05	0.000478			
	(0.000953)	(0.000267)	(0.000339)			
ROA	0.0293	0.00136	-0.00929			
	(0.0260)	(0.00871)	(0.0123)			
LEV	0.0422	-0.00532	-0.0166*			
	(0.0307)	(0.00944)	(0.00980)			
CH	-0.0146	0.0147***	0.0139**			
	(0.0246)	(0.00497)	(0.00536)			
COMBINED_RAM	-0.0144	-0.00545	0.00347			
	(0.0140)	(0.00430)	(0.00481)			
RD_INT	0.00333	0.00567***	0.00719***			
	(0.00219)	(0.000842)	(0.000735)			

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Table 1.6 *Continued from previous page*

VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
AD_IND_INT	0.522	-0.000410	0.179			
	(0.432)	(0.0650)	(0.147)			
GOVERNANCE	0.0192***	-0.00166*	-0.00241**			
	(0.00623)	(0.000893)	(0.00112)			
BIG4	0.00470	0.00177	0.00387			
	(0.0226)	(0.00456)	(0.00595)			
FIRM_AGE	-0.0646***	0.00159	0.000545			
	(0.0164)	(0.00341)	(0.00492)			
MTB				0.000145	-0.0105	-0.0144*
				(0.00101)	(0.00931)	(0.00818)
AGE				-0.0540***	0.496	0.670*
				(0.0145)	(0.302)	(0.342)
SI				0.00202	-1.799***	-1.081**
				(0.0460)	(0.544)	(0.461)
GEOSEG				0.00473	-0.462***	-0.235
				(0.0234)	(0.153)	(0.177)
BUSSEG				0.0148	-0.102	-0.252
				(0.0177)	(0.249)	(0.271)
LN_NITEMS				-0.146*	4.505***	4.549***
				(0.0753)	(1.407)	(1.232)
Constant	-0.0387	0.0582***	0.0556**	0.831**	58.10***	57.78***
	(0.0671)	(0.0190)	(0.0259)	(0.411)	(7.969)	(6.833)
Observations	11,080	11,040	9,306	13,304	15,959	15,149
Adjusted R-squared	0.500	0.276	0.299	0.492	0.869	0.874

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Table 1.6 *Continued from previous page*

VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
r clust sic2	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES

Table 1.7: Accrual-based earnings management and readability in the post-disaster period depending on pre-disaster CSR

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
			FULL SAMPLE			
CSR_Disaster	0.155***			0.127**		
	(0.0349)			(0.0481)		
f_External_hat		0.0594***	0.0654***		7.549*	9.385**
		(0.0174)	(0.0215)		(4.089)	(4.534)
Observations	11,080	11,040	9,306	13,304	15,959	15,149
			CSR < P(50)			
CSR_Disaster	0.270***			0.299***		
	(0.0491)			(0.0265)		
f_External_hat		0.0213	0.0255***		3.035	4.137***
		(0.0136)	(0.00839)		(2.083)	(1.533)
Observations	6,207	6,405	5,420	7,170	8,468	8,219
			CSR ≥ P(50)			
CSR_Disaster	0.0667***			-0.0216		
	(0.0143)			(0.0508)		
f_External_hat		0.194**	0.208*		-44.74*	-52.35
		(0.0921)	(0.107)		(23.22)	(34.18)
Observations	4,873	4,635	3,886	6,134	7,491	6,930
CONTROLS	YES	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES

Table shows two-stage least square regression results depending on pre-disaster CSR. Columns (1) and (4) show the first-stage regression results for *ABS_DA* and *bogindex* based on Eq. 3. Second-stage results are presented in columns (2)-(3) and (5)-(6) where CSR performance (*f_External*) is replaced with the predicted values estimated from the first-stage regressions (*f_External_hat*) based on Eq. 4. For columns (2)-(3) the measure of *ABS_DA* is in $t+2$ and $t+3$, respectively. For columns (5) and (6) the measure of *bogindex* is in $t+1$ and $t+2$, respectively. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

Table 1.8: Leads and lags model

	(1)	(2)	(3)
VARIABLES	External	External	External
CSR_DISASTER_-3	-0.0302***	-0.0304***	-0.0331***
	(0.00678)	(0.00679)	(0.00699)
CSR_DISASTER_-2	-0.0492***	-0.0498***	-0.0534**
	(0.0178)	(0.0175)	(0.0201)
CSR_DISASTER_-1	-0.0710***	-0.0715***	-0.0755***
	(0.0216)	(0.0213)	(0.0236)
CSR_DISASTER_0	0.00905	0.0125	-0.0296**
	(0.0120)	(0.0124)	(0.0119)
CSR_DISASTER_+1	0.0265	0.0191	
	(0.0228)	(0.0217)	
CSR_DISASTER_+2	0.153**		
	(0.0633)		
CSR_DISASTER_3+	0.268***		
	(0.0594)		
CSR_DISASTER_2+		0.176**	
		(0.0747)	
CSR_DISASTER_1+			0.139***
			(0.0287)
Constant	0.0188	0.0173	0.0168
	(0.0349)	(0.0344)	(0.0335)
CONTROLS	YES	YES	YES
Observations	16,281	16,281	16,281
Adjusted R-squared	0.487	0.487	0.486
r clust sic2	YES	YES	YES
YEAR FE	YES	YES	YES
FIRM FE	YES	YES	YES

Table shows the coefficients of the leads and lags estimation of CSR-disasters on firms' CSR performance (*External*) in the treatment and control groups from three years prior the disasters until three years after. *CSR_DISASTER_-3* (*CSR_DISASTER_-2* or *CSR_DISASTER_-1*) is a dummy variable that equals one for the treated industries three (two or one) years before the disaster and zero otherwise. *CSR_DISASTER_+1* (*CSR_DISASTER_+2*) is a dummy variable that equals one for the treated industries one (two) year(s) after the disaster and zero otherwise. *CSR_DISASTER_1+* (*CSR_DISASTER_2+* or *CSR_DISASTER_3+*) is a dummy variable that equals one for the treated industries for all years except the first one (the firms two; or the first three) after the disaster and zero otherwise. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

Table 1.9: Investment in CSR in the post-disaster period depending on pre-disaster CSR

	(1)	(2)	(3)	(4)	(5)
VARIABLES	f_External	f_SGA_AD	f_SGA_R	f2_SGA_AD	f2_SGA_R
			FULL SAMPLE		
CSR_DISASTER	0.165***				
	(0.0257)				
f_External_hat		0.0613	0.0471	0.0376	0.131**
		(0.0237)	(0.0349)	(0.0260)	(0.0547)
Observations	12,968	13,923	13,865	13,183	13,137
			CSR < P(50)		
CSR_DISASTER	0.290***				
	(0.0428)				
f_External_hat		-0.00781	0.0406**	0.0180	0.0790**
		(0.0147)	(0.0198)	(0.0173)	(0.0365)
Observations	7,113	7,957	7,924	7,666	7,636
			CSR ≥ P(50)		
CSR_DISASTER	0.0688***				
	(0.0175)				
f_External_hat		0.123**	0.0606	0.103*	0.312**
		(0.0546)	(0.168)	(0.0567)	(0.151)
Observations	5,855	5,966	5,941	5,517	5,501
CONTROLS	YES	YES	YES	YES	YES
r clust sic2	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES

Table shows the impact of CSR-disasters on CSR investments. Column (1) shows the first-stage regression result for SG&A investments. For columns (2)-(3) the measures of SG&A (*SGA_AD* or *SGA_R*) are in $t+1$, for columns (4)-(5) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table 1.10: *Strengths* and *Concerns* in the post-disaster period depending on pre-disaster CSR

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Strengths	Concerns	f_Strengths	f_Concerns	f2_Strengths	f2_Concerns
CSR_DISASTER	0.124***	-0.0200	0.118***	-0.0335	0.120***	-0.0294
	(0.0404)	(0.0763)	(0.0397)	(0.101)	(0.0300)	(0.110)
SIZE	0.0106	0.0125	0.0237**	0.0181	0.0289**	0.0396***
	(0.00818)	(0.0116)	(0.00921)	(0.0124)	(0.0110)	(0.0122)
ROA	0.00328	-0.0407	0.0242	-0.101**	-0.0273	-0.132***
	(0.0272)	(0.0336)	(0.0301)	(0.0420)	(0.0442)	(0.0442)
MB	-2.79e-06	0.000735	-0.000747	0.000627	-2.61e-06	-0.000449
	(0.000642)	(0.000784)	(0.000792)	(0.000996)	(0.00121)	(0.000712)
LEV	0.0531	0.00410	0.0193	-0.0382	0.0342	-0.0448
	(0.0382)	(0.0384)	(0.0465)	(0.0376)	(0.0520)	(0.0461)
CH	0.0270	-0.00765	0.00556	-0.00803	0.0550	-0.0456
	(0.0401)	(0.0514)	(0.0523)	(0.0357)	(0.0556)	(0.0359)
Constant	0.0822	0.258***	0.00680	0.308***	-0.0120	0.240***
	(0.0542)	(0.0834)	(0.0555)	(0.0911)	(0.0680)	(0.0824)
Observations	16,281	16,281	12,968	12,968	10,591	10,591
Adjusted R-squared	0.737	0.614	0.743	0.629	0.754	0.636
r clust sic2	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
FIRM FE	YES	YES	YES	YES	YES	YES

Table shows the impact of CSR-disasters on *Strengths* and *Concerns* parts of CSR performance. For columns (1)-(2) the measures of CSR (*Strengths* or *Concerns*) are in t, for columns (3)-(4) in $t+1$, and for columns (5)-(6) in $t+2$. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. Variables are defined in Appendix 1.A.

Table 1.11: Accrual-based earnings management in the post-disaster period depending on pre-disaster corporate governance

Panel A: Accrual-based earnings management depending on pre-disaster proportion of independent directors

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
			Ind_Dir < P(50)			
CSR_Disaster	0.149***			0.178***		
	(0.0163)			(0.0287)		
f_External_hat		0.0602*	0.0526**		4.680***	4.982***
		(0.0309)	(0.0194)		(1.262)	(1.837)
			Ind_Dir ≥ P(50)			
CSR_Disaster	0.228**			0.175		
	(0.108)			(0.154)		
f_External_hat		0.0439***	0.0433**		3.243	4.097
		(0.0152)	(0.0191)		(3.934)	(5.382)

Panel B: Accrual-based earnings management depending on pre-disaster E-INDEX

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
			E-INDEX < P(50)			
CSR_Disaster	0.195*			0.167		
	(0.115)			(0.167)		
f_External_hat		-0.00907	-0.00495		-0.344	-0.765
		(0.0146)	(0.0115)		(3.404)	(4.273)
			E-INDEX ≥ P(50)			
CSR_Disaster	0.203***			0.193***		
	(0.0501)			(0.0613)		
f_External_hat		0.0659***	0.0692***		5.823**	6.743***
		(0.0159)	(0.0170)		(2.311)	(1.720)

Panel A shows two-stage least square regression results depending on pre-disaster proportion of independent directors. Panel A shows two-stage least square regression results depending on pre-disaster E-INDEX. All regressions include year and industry fixed effects and a set of control variables. Residuals are clustered at 2-digit sic level. Columns (1) and (4) show the first-stage regression results for *ABS_DA* and *bogindex* based on Eq. 3. Second-stage results are presented in columns (2)-(3) and (5)-(6) where CSR performance (*f_External*) is replaced with the predicted values estimated from the first-stage regressions (*f_External_hat*) based on Eq. 4. For columns (2)-(3) the measure of *ABS_DA* is in $t+2$ and $t+3$, respectively. For columns (5) and (6) the measure of *bogindex* is in $t+1$ and $t+2$, respectively. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

Table 1.12: Accrual-based earnings management in the post-disaster period depending on pre-disaster leverage

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	f_External	f2_ABS_DA	f3_ABS_DA	f_External	f_bogindex	f2_bogindex
			LEV < P(50)			
CSR_Disaster	0.191***			0.176***		
	(0.0622)			(0.0629)		
f_External_hat		0.0326	0.0388**		3.263	4.962
		(0.0202)	(0.0184)		(2.791)	(3.834)
			LEV ≥ P(50)			
CSR_Disaster	0.127***			0.0820***		
	(0.0169)			(0.0286)		
f_External_hat		0.102***	0.103**		16.22**	18.70***
		(0.0374)	(0.0441)		(7.025)	(6.291)

Table shows two-stage least square regression results depending on pre-disaster level of leverage. All regressions include year and industry fixed effects and a set of control variables. Residuals are clustered at 2-digit sic level. Columns (1) and (4) show the first-stage regression results for *ABS_DA* and *bogindex* based on Eq. 3. Second-stage results are presented in columns (2)-(3) and (5)-(6) where CSR performance (*f_External*) is replaced with the predicted values estimated from the first-stage regressions (*f_External_hat*) based on Eq. 4. For columns (2)-(3) the measure of *ABS_DA* is in $t+2$ and $t+3$, respectively. For columns (5) and (6) the measure of *bogindex* is in $t+1$ and $t+2$, respectively. *, **, *** Indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Variables are defined in Appendix 1.A.

Chapter 2

Do Markets Reward CSR Firms? Evidence From Target Beating Behavior

2.1 Introduction

Corporate Social Responsibility (CSR) is an issue of growing interest in the business world, increasingly considered by investors in forming their portfolios and selecting stocks. For example, in a recent letter, Larry Fink, BlackRock's chief executive, wrote that companies have to focus not only on financial performance but also on their stakeholders, and make a positive contribution to society. Mr. Fink said that companies were too focused on quarterly results, when "*engagement needs to be a year-round conversation about improving long-term value*," and emphasized firm's ability to manage environmental, social, and governance matters as a necessary attribute of sustainable growth and good governance, noting that BlackRock was "*increasingly integrating these issues into our investment process.*"[1] Despite this increasing role of CSR, and the amply held views that CSR is associated with long-term value creation, little is known about how CSR shapes firms' incentives to meet and beat analyst consensus earnings forecast, which may be a signal of managerial short-

[1] Larry Fink, BlackRock's chief executive, *A Sense of Purpose, Larry Finks' Letter to CEOs* `https://www.blackrock.com/corporate/investor-relations/2018-larry-fink-ceo-letter`

termism and myopia (Graham et al. 2005; Bhojraj et al. 2009). The objective of this paper is to address this question.

Following prior literature, we define CSR as voluntary, stakeholder-oriented actions that (1) aim to improve social and environmental conditions, (2) are not required by law, and (3) extend beyond firm's profit maximization (Godfrey et al. 2009; Bénabou and Tirole 2010; Liang and Renneboog 2017). Building on this definition, we split firms into CSR and non-CSR, and predict that, compared with non-CSR firms, CSR firms have a longer-term horizon, engage less in target beating behaviour, and as a consequence, suffer lower penalties when missing their earnings targets. Two key arguments underpin our predictions. First, CSR firms may have different investors that are less critical of short-term performance (Eccles et al. 2014; Serafeim 2015). Second, high reputation of CSR firms and their strong connection with stakeholders may help to prevent negative market expectations regarding future prospects (Godfrey et al. 2009; Lins et al. 2017; Shiu and Yang 2017) and, thus, mitigate negative price revisions if they miss an earnings target.

In line with our primary argument that CSR firms have longer horizons and attract long-term investors that are less critical of short-term goals, Eccles et al. (2014) show that CSR firms are more long-term oriented and consistently engage with stakeholders over longer windows. Serafeim (2015) argues that firms that provide integrated reporting are more likely to attract long-term investors, as these investors value information about long-term firms' prospective. Anecdotal evidence also supports this view. Consider Unilever and its former CEO, Paul Polman, who is known for his vision of environment and socially responsible business. Under his management, in 2012, Unilever announced that they would no longer attempt to improve short-term stock prices,[2] and would stop issuing quarterly guidance.[3]

Regarding reputational motives, several empirical papers emphasize high ethical standards in CSR firms that help to improve trust with stakeholders. Prior literature suggests that corporate culture has an impact on real economic decisions including incidents of earnings management (Kim et al. 2012), and tax avoidance (Hoi et al. 2013). In their survey study, Graham

[2] The New York Times (November 29th, 2018) `https://www.nytimes.com/2018/11/29/business/unilever-ceo-paul-polman.html`

[3] After three years as a CEO in Unilever, the holding by speculative hedge-funds went down from 15% in 2009 to less than 5% in 2012. The Guardian (April 24th, 2012) `https://www.theguardian.com/sustainable-business/paul-polman-unilever-sustainable-living-plan`

et al. (2005) show that managers believe that target missing is associated with uncertainty about firms' future prospects and is a signal of previously unknown problems and, thus, leads to market penalties. If high reputation and stronger connections with stakeholders help CSR firms reduce this threat, CSR firms may receive a lower penalty when they miss their earnings targets. This assumption is consistent with the studies on the insurance role of CSR against idiosyncratic (Godfrey et al. 2009; Shiu and Yang 2017), and systematic risk (Lins et al. 2017; Albuquerque et al. 2018). This 'insurance' perspective implies that high social capital maps into a stronger relationship with stakeholders, which has positive real effects in the case of bad news or crisis.

Given the above arguments, overall, we expect that CSR firms that miss their earnings targets have lower negative price revisions. Regarding the rewards for meeting or beating targets, the prediction is not as straightforward. There is a conjecture that "*the market hammers the stock price when the firm fails to meet the target, but stock price is relatively insensitive to the degree to which the target is exceeded*" (Graham et al. 2017, p. 43). Thus, the reward for target beating may be relatively homogeneous across firms, irrespective of specific firm-level characteristics including being a CSR firm. Bartov et al. (2002) show that market rewards for beating the forecast are only marginally minor when earnings or expectation management are used. This may suggest that investors have limited ability to detect earnings management at the earnings announcement day. In contrast, Gleason and Mills (2008) show that these market rewards are smaller if the firm beats the forecast by decreasing tax expense, where these cuts are plausibly more visible to market participants. For CSR firms, the extent to which CSR is visible and creates a goodwill for target-beating firms is not obvious. In addition, not all CSR practices may always be valuable.[4] Therefore, the extent to which markets reward target beating in CSR firms differently than in non-CSR firms is an open empirical question that we test in this study.

We follow the design in Bhojraj et al. (2009) and split firms that miss their analysts forecasts into firms with high and low CSR performance. Second, we identify firms that meet their earnings targets, to test whether CSR firms receive differential market rewards for target beating. CSR data comes from KLD, which has been used extensively in prior research to operationalize the

[4] Not all CSR practices may be equally valuable for investors. For example, employee satisfaction may be valuable for investors because it leads to superior financial performance (Edmans and Liu 2011). However, charity marathon may not be relevant for investors and, thus, do not provide the same 'insurance' protection.

CSR construct (Kim et al. 2012; Di Giuli and Kostovetsky 2014; Flammer 2015; Lins et al. 2017).

We report the following key findings. First, we find that CSR firms have lower negative price revisions proxied by 3-day returns surrounding the release of an earnings announcement. The positive effect of CSR is stronger for firms with a prevailing proportion of long-run institutional investors, measured by Bushee's classification.[5] This result is consistent with our conjecture that CSR firm investors are less critical of short-run financial performance. To test our 'reputation' hypothesis, we examine whether CSR firms have better accounting quality, as a proxy for firms' commitment to high ethical standards in communication with their stakeholders. Consistent with Kim et al. (2012), we find that CSR firms have lower earnings management both when they miss and when they beat their targets. This suggests that firm commitment to CSR may help establish stronger, more trusting relationships with stakeholders which, in turn, pays off when CSR firms miss their target. This lower penalty could indicate lower stakeholders' concerns regarding future prospects. However, according to Bartov et al. (2002), higher accruals quality does not guarantee higher reward for target beating to CSR firms. We turn to the target beating case next.

Regarding target beating, we do not find evidence that CSR firms receive an extra reward for exceeding analysts' earnings expectations. This is consistent with the evidence in Lins et al. (2017) of asymmetric CSR effects, where CSR pays back in the bad, but not in the good times. This may indicate that the benefits to CSR firms are constrained to limiting penalties for target missing, which is consistent with Graham et al. (2005) conjuncture that market rewards to target beating may be homogeneous across firms. Further, it draws attention to the 'insurance' role of CSR (Godfrey 2005; Godfrey et al. 2009; Lins et al. 2017).

CSR reflects a firm choice, which may correlate with unobservable firm characteristics that also affect the penalty for 'missers' or target beating incentives. For instance, top executives' compensation structure may affect both managers' commitment to CSR and their incentives. We address this empirical challenge by following Flammer and Kacperczyk (2016b) methodology and applying the enactment of constituency statutes as a plausibly exogenous shock for CSR. Using 2SLS approach with predicted values of CSR as an instrument, we confirm our previous findings.

[5] Bushee's personal website for institutional investor classification data, `http://acct.wharton.upenn.edu/faculty/bushee/IIclass.html`.

We make a number of contributions to prior literature. Our study relates to the large body of work on target beating behavior (Skinner and Sloan 2002; Bhojraj et al. 2009; Gilliam et al. 2015), which indicates that CFOs believe that markets penalize firms for missing earnings targets even by a small margin, and thus, they are ready to sacrifice long-run performance to achieve these benchmarks (Graham et al. 2005). Skinner and Sloan (2002) show that this penalty is not homogeneous for all firms, and in particular, that growth stocks receive an asymmetrically high penalty for missing the target.[6] We contribute to this literature by providing evidence that CSR firms have lower incentives to engage in target beating behavior as they receive lower market penalties for target missing. Also, we find that compared with their non-CSR counterparts, CSR firms are more likely to miss the target, consistent with lower incentives for target beating. We also extend research on the insurance role of CSR. This literature argues that CSR provides insurance against idiosyncratic risk (Godfrey et al. 2009; Shiu and Yang 2017) and systematic risk (Albuquerque et al. 2018), such as during the 2008-2009 financial crisis (Lins et al. 2017). Our results highlight the insurance benefit of CSR.

We are among the first studies to examine whether CSR firms receive differential market rewards and penalties. The closest studies to ours are those of Dhaliwal et al. (2012) and Becchetti et al. (2013), which differ fundamentally from ours. Dhaliwal et al. (2012) focus on the question of whether issuance of stand-alone CSR reports provides additional information to the market and whether this information is useful for analysts, where firms with stand-alone CSR reports have lower analyst forecast error, concluding that non-financial CSR information reduces information asymmetry. Becchetti et al. (2013) study find that CSR quality, proxied by accounting transparency, high corporate governance, and stakeholder risk, is associated with lower analyst forecast errors, while overinvestment in CSR strengths makes earnings less predictable.

The paper proceeds as follows. Section 2.2 reviews the relevant literature and develops hypothesis. Section 2.3 describes the data collection procedure and variable measures. Section 2.4 discusses main results. Section 2.5 provides additional tests. Finally, Section 2.6 concludes.

[6] After the Sarbanes-Oxley Act, Gilliam et al. (2015) do not find evidence of the zero-earnings discontinuity, indicating target beating behaviour may be on the decline.

2.2 Literature Review and Hypotheses Development

2.2.1 Motivation for target beating behavior

Prior literature suggests that managers undertake actions to avoid small negative earnings surprise (Degeorge et al. 1999; Burgstahler and Eames 2006). To explain why managers attempt to meet earnings benchmarks, researchers have studied CEO compensation (Matsunaga and Park 2001; McAnally et al. 2008; Jia 2013; Bennett et al. 2017) and ownership (Quinn 2018) structure, and capital market consequences of missing benchmarks (Skinner and Sloan 2002; Graham et al. 2005; Frankel et al. 2010).

From markets perspective, as first documented by Ball and Brown (1968), a positive relation between earnings and stock returns is well known in the literature. Further research shows that independent of the firms absolute performance and controlling for earnings management practices and expectations management, markets still reward fixrms for target beating and penalize for target missing (Bartov et al. 2002; Bhojraj et al. 2009). Survey research by Graham et al. (2005) suggests that CFOs believe that markets would penalize them for missing analyst forecast even for a small amount and thus, are ready to sacrifice long-run performance in order to achieve the benchmark. CFOs claim that achieving earnings target helps to build credibility with the market. Further, Frankel et al. (2010) show that missing the target increases the information demands of investors, proxied by the length and tone of earnings conference calls. This result is statistically, but not economically significant, supporting the idea that just missing the forecast entails little incremental investor-driven cost.[7] However, the magnitude and the severity may vary depending on firms' specific characteristics.

For instance, Skinner and Sloan (2002) show that asymmetrically large negative stock return for growth firms that miss the forecast is explained by analysts' optimism (i.e., their over-estimation of earnings). Thus, we can hypothesize that there is a heterogeneity in terms of how markets penalize different firms for target missing. Further, we explore whether CSR firms have

[7] however, from the equilibrium point of view, the result means either investor-relations cost is minimal or the firms that miss the target are the only firms for which investor-relations cost is low. In other words, those firms for which this cost is high already either manipulate earnings or forecast to achieve the target.

different penalty for target missing and at what extend it depends on investors' investment horizons and firms' reputation.

2.2.2 CSR and the penalties associated to missing earnings targets

Certain types of shareholder structure may affect the shareholders' (short- and long-term) investment behavior. For instance, Bushee and Noe (2000) show that firms with a prevailing percentage of "transient"[8] investors are likely to cut R&D spending to meet earnings target, which reflects their short-sighted investment behavior. Serafeim (2015) shows that long-term shareholders tend to prefer to buy and hold shares in firms that provide integrated reporting,[9] since these firms disclose more information about their long-term prospects. In addition, Riedl and Smeets (2017) argue that socially responsible investors have a longer investment horizon. Taken together, these findings suggest that CSR firms may have a different shareholder structure which contributes to lower market penalty for target missing.

The range of results on the performance of socially responsible investments (SRI) in the existing literature varies widely,[10] from little difference between SRI and conventional funds in the US and the UK (Bauer et al. 2005) to the finding that SRI funds underperform conventional funds in Continental Europe and Asia-Pacific (Renneboog et al. 2008b). However, SRI have experienced a strong growth in Continental Europe and Asia-Pacific (Renneboog et al. 2008b) which can reasonably suggest that some investors are willing to forgo a positive net present value in order to achieve their personal values related to social responsibility. In this vein, El Ghoul and Karoui (2017) show that compared to low-CSR funds, high-CSR funds have lower performance and lower performance-flow relationship. Bollen (2007) shows that SR funds have lower volatility, which confirms that comparing with conventional funds, investors are more loyal for poorly performing SR funds. Potentially, good reputation and high ethical standards in CSR firms can explain the existence of more loyal investors. We discuss it next.

Godfrey (2005) argues that corporate philanthropy can generate a positive moral capital among stakeholders and, later on, this reputation can serve as an 'insurance' protection. In this

[8] those holding lots of stocks with high turnover and short holding periods
[9] disclosing CSR performance has to be associated with CSR performance
[10] For extensive literature review follow Renneboog et al. (2008a)

vein, using a set of 1384 firm-related negative events, Shiu and Yang (2017) show that accumulated social capital serves as an insurance and protects stock and bond prices of CSR firms during a time of crisis. Similarly, Lins et al. (2017) argue that when there is an overall lack of trust between firms and their stakeholders, CSR firms perform better due to accumulated social capital that prevents a drop in the level of trust. The authors show that during the 2008-2009 financial crisis, compared to non-CSR firms, CSR firms raised more debt and had higher stock returns, profitability, growth, sales per employee. According to 'signal-jamming' model by Stein (1989), because the market forecast already includes a certain level of earnings manipulations, missing the target is considered as a strong signal of firms' low future prospects and, thus, penalized by the markets. If CSR firms have stronger reputation for constraining myopia and short-termism, target-missing may signal absence of target-beating behavior, rather than poor future prospects. Consistent with this conjecture, Kim et al. (2012) show that CSR firms are associated with lower level of earnings management as an outcome of high ethical standards. Moreover, Bhojraj et al. (2009) show that firms that miss the target but do not engage in earnings management, in the long run, outperform counterparts that beat the target but engage in earnings management. Thus, we can reasonably assume that the market would assign lower penalty for target-missing for CSR firms.

Overall, if CSR firms have a shareholder structure that is biased towards long-run investment horizons, CSR firms will be penalized less for target missing, as long-run investors are less concerned about short-run targets. Further, the reputation for high ethical standards that have impact on real economic decisions can serve as an insurance and mitigate markets' penalty for target missing to CSR firms. Given this premise, we take the logical next step of investigating the potential consequences of target missing for CSR firms and formulate the following hypothesis:

> ***H1:*** *CSR firms that miss their forecast have smaller negative price revision comparing with non-CSR counterparts.*

2.2.3 CSR and the rewards associated to beating earnings targets

Prior literature provides conflicting evidence on target-beating rewards for CSR firms. Survey study by Graham et al. (2005) shows that CFOs have conjecture that markets significantly decrease stock

prices for target missing, but markets stay relatively insensitive to the extent to which firms beat the target. If markets are less sensitive to target beating, CSR may not provide extra reward for exceeding analyst forecasts. Bartov et al. (2002) show that market reward for beating the forecast is smaller by a statistically, but 'economically minor' amount when earnings or expectation management are used. The authors argue that this minor response could be due to the models that are used to estimate expectation management. Alternatively, managers may have limited ability to detect the extent of earnings management on the earnings announcement day. In this vein, Gleason and Mills (2008) argue that tax expense manipulations are more visible to market participants at the earnings announcement date and thus, the reward has to be lower. The authors show that the premium for forecast beating is smaller if the firm only beats the target because of decreasing tax expense. Overall, it is not straightforward to predict from prior literature whether CSR is visible for market participants and whether the latters value CSR performance for firms that beat the target. We formulate the following as our second hypothesis:

> ***H2:*** *CSR firms that meet/beat their forecast have the same positive price revision comparing with non-CSR counterparts.*

2.3 Data and Sample Selection

2.3.1 Firm-level data

We begin with CSR data that is obtained from MSCI (formerly KLD). KLD provides information about social performance along dimensions such as corporate governance, community, diversity, employee relations, environment, and product. KLD covers the largest 3000 U.S. publicly traded companies by market capitalization and is used in numerous studies to measure CSR performance (e.g., Hong and Kostovetsky (2012); Kim et al. (2012); Flammer (2015); Lins et al. (2017)).

We obtain accounting data from Compustat and financial data from CRSP. Following prior research (e.g., Bhojraj et al. (2009) Kim et al. (2012); Lins et al. (2017)) we remove financial firms from our sample (SIC codes 6000-6999) as these firms have different characteristics of accruals. We obtain obtain both forecast and reported earnings from I/B/E/S to ensure consistency (Bhojraj

et al. 2009). All continuous variables are winsorized at the top and bottom 1 percent of their distributions. Although the exact number of observations depends on the specific regression, the baseline sample for which we estimate the equations contains 1045 firm-year observations for the period 2000 - 2015.

2.3.2 Measurement of CSR and earnings surprise

CSR measures

To construct continuous CSR proxy (CSR_SCORE), we follow Kim et al. (2012) and from strength-related measures we subtract concern-related ones among five dimensions: environment, community, employee relations, diversity, and product. In 2010 the industry-based key issue rating model was introduced to KLD. To mitigate this potential problem we scale each KLD dimension by the maximum value of this dimension in that given year. We construct dummy variable for high (low) CSR performance such that High_CSR (Low_CSR) takes the value of one if the firm exhibits a net KLD score (CSR_SCORE) beyond (below) the median of its industry in that given year.

Earnings surprise

Following Bhojraj et al. (2009) we refer to firms that miss expectations (the last analyst consensus forecast before earnings announcement or target) by one or two cents as 'missers,' firms that exactly meet expectations as 'meeters,' and firms that beat by one or two cents as 'beaters.'[11] We use firms that miss or beat by only one or two cents because we are interested in maximizing the likelihood that a firm that misses (beats) would have beaten (missed) the target if it had (had not) cut some of its CSR projects. Following Bissessur and Veenman (2016) we use unscaled earnings surprise per share, rather than scaled earnings numbers because market participants are mainly concerned with unscaled earnings numbers.

[11] Our conclusions are unchanged if we use five cents threshold.

2.3.3 Empirical Model

To capture the relation between market penalty (reward) for target missing (target meeting and beating) and CSR, we estimate the following baseline models:

$$CAR(-1,+1) = \beta_0 + \beta_1 CSR\_SCORE\_Miss + \beta_2 CSR\_SCORE\_Meet\_Beat + \beta_3 CONTROLS + \epsilon_t, \quad (2.1)$$

$$CAR(-1,+1) = \beta_0 + \beta_1 High\_CSR\_Miss + \beta_2 High\_CSR\_Meet\_Beat + \beta_3 Low\_CSR\_Miss + \beta_4 CONTROLS + \epsilon_t, \quad (2.2)$$

$$CAR(-1,+1) = \beta_0 + \beta_1 High\_CSR\_Miss + \beta_2 High\_CSR\_Meet\_Beat + \beta_3 Low\_CSR\_Meet\_Beat + \beta_4 CONTROLS + \epsilon_t, \quad (2.3)$$

where *CAR(-1,+1)* is the cumulative abnormal return over the three-day window centered on the earnings announcement date, and the abnormal return is calculated as the raw stock return minus the CRSP value-weighted market return.[12] *CSR_SCORE_Miss* is the interaction term between *CSR_SCORE* and the dummy variable *miss* that equals 1 if earnings surprise is -1 or -2 , and 0 if earnings surprise is 0, 1 or 2. *CSR_SCORE_Meet_Beat* is the interaction term between *CSR_SCORE* and the dummy variable *meet_beat* that equals 1 if earnings surprise is 0, 1 or 2 , and 0 if earnings surprise is -1 or -2. *High_CSR_Miss* (*High_CSR_Meet_Beat*) is interaction between dummy variable *High_CSR* and dummy variable *miss* (*meet_beat*); *Low_CSR_Miss* (*Low_CSR_Meet_Beat*) is interaction between dummy *Low_CSR* and dummy variable *miss* (*meet_beat*). *CONTROLS* is a set of lagged firm-level standard controls such as firm size, market-to-book, return on assets, leverage, and cash holdings. We use year and industry (two-digit SIC) fixed effects and adjust the standard errors by a two-dimensional cluster at the firm and year levels.

In eq.2.1, we use a continuous proxy for CSR (CSR_SCORE), while in eq.2.2 and 2.3, we use dummy variables $High\_CSR$ and Low_CSR. In eq.2.2, we test whether CSR firms that miss the target receive higher reward than non-CSR firms that meet or beat the target. In eq.2.3 we test whether CSR firms that miss the target receive lower penalty than non-CSR firms that miss

[12] The results are similar when we use Fama-French Three Factor Model and Fama-French Four Factor Model.

the target. If CSR firms receive lower penalty for missing the target, we would expect lower initial stock price reaction to earnings news. Therefore, we predict that the coefficient on the interaction term between CSR proxy and *miss* will be positive ($\beta_1 > 0$).

2.4 Results

2.4.1 Descriptive statistics

In Table 2.1, we present descriptive statistics for selected variables. All variables are defined in Appendix 2.A. On average, firms in our sample have more concerns than strengths (CSR_SCORE mean is -0.103), consistent with prior research (e.g., Kim et al. (2012)). In our baseline sample, 43% of firms are classified as high CSR (High_CSR mean is 0.43), which implies that they exhibit a net KLD score beyond the median of their industry in that given year. Out of those 977 observations, 27% present an EPS figure that falls short of the expected analyst median consensus by a maximum of 2 cents. On the other hand, 73% of firm-year observation exhibit actual EPS that are equal to the analysts' consensus or at most 2 cents beyond that. Out of that 73%, 33.56% of observations lie at the analysts' consensus and 66.44% exceed such consensus by at most 2 cents. The cumulative abnormal returns are on average close to zero in the market adjusted model, the Fama-French 3 factor model, and the Fama-French 3 factor model plus momentum, whereas firms exhibit on average larger market values compared to book values, low leverage levels, high liquidity and moderately positive operating performance. Table 2.2 presents Pearson correlations.

2.4.2 Main specification

Table 2.3 presents the main results. The table shows 3-day returns surrounding the release of the earnings announcement, for CSR and non-CSR firms that miss or meet/beat (MB) the target. From Columns 1 to 3 we use a continuous measure of CSR (CSR_SCORE) as: STRENGTHS - CONCERNS. Miss is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just below the median analyst consensus. Miss_Beat is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just above

or on the median analyst consensus. As can be seen, as firms that miss the target increase CSR the market reduces the penalty those firms would receive. From Columns 4 to 9 we use High_CSR as a measure of CSR, which is defined as a dummy variable that takes the value 1 whenever a firm shows a CSR_SCORE score that is above the industry-year median. From columns 4 to 6 we compare firms that have a high level of CSR and miss earnings targets with firms that have low CSR but meet or beat earnings targets. This comparison represents that of Bhojraj et al. (2009) when they compare firms with high accrual quality that miss earnings targets and firms that MB and have low accrual quality. We find that the first group (firms that miss and have high CSR) show larger levels of CAR[-1,1] compared to the second group. From columns 4 to 6 we compare firms that have a high level of CSR and miss earnings targets with firms that have low CSR and also miss earnings targets. This comparison represents our main hypothesis. As shown, the first group (firms that miss and have high CSR) show larger levels of CAR[-1,1] compared to the second group, albeit this result is not very strong. In untabulated test, we we examine the future performance of CSR and non-CSR firms that miss the target. Following Bhojraj et al. (2009) we calculate portfolio-matched buy-and-hold abnormal returns (BHARs) for 3 months after the earnings announcement date.[13] There is some evidence that CSR missers outperform non-CSR missers at the 3-month interval. Again, these results suggest that comparing with non-CSR firms, CSR-firms are more long-term oriented and thus, these firms are more likely to underperform in the short-run but outperform in the long-run.

2.5 Additional Analysis

2.5.1 Effect of long-term institutional investors and high reputation

The above results provide evidence of a lower penalty for CSR firms for missing the target. Further, we show that CSR firms do not receive an extra reward for MB the target, indicating that CSR pays off only in the crisis periods serving as an 'insurance' protection. These results are consistent with

[13] To compute BHARs we follow eq. 2, p.2371, in Bhojraj et al. (2009)

at least two not mutually exclusive interpretations: either CSR firms have a greater percentage of long-run investors, who are less critical of short-term financial targets, or/and CSR firms have better reputation that helps to prevent markets' negative expectation regarding firms' future prospects.

That being said, the usefulness of CSR as an 'insurance' in the short-run likely depends on the proportion of long-oriented investors who focus on the long-run performance. In particular, Eccles et al. (2014) show that CSR firms are more long-term oriented and implement processes that consistently engage with stakeholders over the long-term. Edmans (2011) shows that firms with highest employee satisfaction (as an alternative proxy for CSR) earn superior long-run returns. Consequently, we should observe that among the group of CSR firms that miss the target, firms with a greater proportion of long-oriented investors receive the lowest penalty.

We measure long-term institutional investors with Brian Bushee's classification of 'transients,' 'quasi-indexers,' and 'dedicated holders,' depending on the number of stocks in an investor's portfolio and its average holding period (Bushee and Noe 2000). To examine whether lower penalty is at least partially explained by the fact that long-term investors are less critical of short term targets, we estimate the following regressions:

$$\begin{aligned} CAR(-1,+1) = \beta_0 &+ \beta_1 CSR\_Miss\_LT + \beta_2 CSR\_Meet\_Beat\_LT \\ &+ \beta_3 CSR\_Miss\_ST + \beta_4 CSR\_Meet\_Beat\_ST \\ &+ \beta_5 CONTROLS + \epsilon_t, \end{aligned} \tag{2.4}$$

$$\begin{aligned} CAR(-1,+1) = \beta_0 &+ \beta_1 High\_CSR\_Miss\_LT + \beta_2 High\_CSR\_Miss\_ST \\ &+ \beta_3 High\_CSR\_Meet\_Beat\_LT + \beta_4 High\_CSR\_Meet\_Beat\_ST \\ &+ \beta_5 Low\_CSR\_Miss\_ST + \beta_6 Low\_CSR\_Meet\_Beat\_LT \\ &+ \beta_7 Low\_CSR\_Miss\_LT + \beta_8 CONTROLS + \epsilon_t, \end{aligned} \tag{2.5}$$

$$\begin{aligned} CAR(-1,+1) = \beta_0 &+ \beta_1 High\_CSR\_Miss\_LT + \beta_2 High\_CSR\_Miss\_ST \\ &+ \beta_3 High\_CSR\_Meet\_Beat\_LT + \beta_4 High\_CSR\_Meet\_Beat\_ST \\ &+ \beta_5 Low\_CSR\_Miss\_ST + \beta_6 Low\_CSR\_Meet\_Beat\_LT \\ &+ \beta_7 Low\_CSR\_Meet\_Beat\_ST + \beta_8 CONTROLS + \epsilon_t, \end{aligned} \tag{2.6}$$

where independent variables of interest are constructed as triplet interaction between CSR proxy (continuous in eq.2.4 and dummies in eq.2.5 and 2.6 as defined before), dummy variable *miss* or *meet_beat*, and proxy for long (LT) and short (ST) investors. All variables are defined in

Appendix 2.A. We use the same set of control variables as in eq.2.1-2.3. In eq.2.5, we test whether CSR firms that miss the target and have a proportion of long term investors that is above the median in a given year have higher reward than non-CSR firms that meet or beat the target but have proportion of long term investors that is below the median in a given year. In eq.2.6, we test whether CSR firms that miss the target and have an above-the-median proportion of long term investors in a given year have lower penalty than non-CSR firms that miss the target and have proportion of long term investors that is above the median in a given year. If lower penalty for CSR firms is (partially) explained by the fact that they have a higher proportion of long-term investors, we expect CSR firms with majority of long-run investors to receive the lowest penalty for missing earnings target. Therefore, we predict that the coefficient of the triplet interaction will be positive ($\beta_1 > 0$).

Table 2.4 reports the results separately for 'quasi-indexers,' and 'dedicate' institutional investors. The results suggest that CSR firms that miss earnings target and have higher proportion of long-term institutional investors experience lower negative price revision than counterparts.

As pointed out above, another plausible explanation of lower penalty for CSR firms is that stakeholders have higher trust in these firms and, thus, do not consider failing the target as a signal of poor firms' prospects. In contrast, investors may consider CSR firms that marginally miss the target as the most ethical firms because these firms do not undertake myopic actions to avoid missing the target. In practice, it is generally difficult to find a sitting in which we can test the level of trust and tightness of relationship between firms and their stakeholders. However, we can test whether CSR firms that miss the target refrain from myopic actions that would help to achieve the target. For instance, Bhojraj et al. (2009) argue that managers engage in earnings management (EM) to avoid small negative earnings surprise. If CSR firms that miss the target have lower level of EM we can reasonably assume that adhering to transparency helps CSR firms to establish stronger connection with their stakeholders. Then, similar to Lins et al. (2017), we can assume that stakeholders would treat more favorable CSR firms that miss the target than non-CSR counterparts.

To estimate this relationship we use the following model:

$$EM = \beta_0 + \beta_1 High\_CSR\_Miss + \beta_2 High\_CSR\_Meet\_Beat + \beta_3 Low\_CSR\_Miss + \beta_4 CONTROLS + \epsilon_t, \quad (2.7)$$

where dependent variable EM is a proxy for earnings management and is either *AAC*, *ABS_DA*, *AB_EXP*, *AB_CFO*, *AB_PROD*, or *REM*. All variables are defined in Appendix 2.A.

Table 2.5 presents the results from multivariate regression analyses of discretionary accruals (columns 1 and 2) and real activities manipulation (*RAM*) (columns 3-6). We report results using signed and absolute value of discretionary accruals (*AAC* and *ABS_DA*, respectively). Following Roychowdhury (2006), we have three individual proxies for RAM (*AB_EXP*, *AB_CFO*, *AB_PROD*) and a combined proxy for *RAM* (*REM*). For the regressions of *AB_EXP* and *RAM* , the estimated coefficient for *High_CSR_Miss* is negative and significant. Further, *High_CSR_Miss* is negatively and significantly associated with abnormal production variable, *AB_PROD*. These findings indicate that in contrast to non-CSR firms that MB, CSR firms that miss the target engage in earnings management less. Overall, this result gives us indirect evidence, that CSR firms may have higher ethical standards that help to strengthen the relations with stakeholders which, in turn, helps to mitigate negative market expectations when they miss the target.

2.5.2 Analyst following

The above findings provide evidence of a lower negative price revision for CSR firms in the time when these firms miss the target. Further, we find that among all firms that miss the target, CSR firms with the majority of long-term institutional investors receive the lowest negative price revision. To provide more granularity in our results, we repeat our analyses depending on the number of analysts that follow a firm.

Several recent studies argue that just missing earnings target is more severe for firms with a greater number of analysts (Frankel et al. 2010; Graham et al. 2017). We use the same empirical identification as in eq.2.3-2.6, but instead of high/low proportion of long-run institutional investors we use the level of analyst following. We construct variable *High_An* (*Low_An*) as a dummy variable that takes the value 1 whenever a firm's number of analysts is higher (lower) than the

median of a given year, industry and total assets' quartile. The results in Table 2.6 suggest that among all firms that miss the target, CSR firms with low number of analyst following receive the lowest market penalty.

2.5.3 The likelihood to miss, beat or meet analysts' targets

So far, we have argued that comparing with non-CSR firms, CSR firms are less penalized for missing earnings target. In other words, CSR firms have less incentives to engage in target beating behavior as these firms receive a lower penalty for missing. Given this result, we take the logical next step and test whether CSR firms are more (less) likely to miss (beat) the target.

The results in Table 2.7 show that CSR firms have higher (lower) propensity to miss (beat) earnings target. This result is consistent with the hypothesis that CSR firms do not engage in target beating behavior.

2.5.4 Dividends

Thus far, the results suggest that CSR firms receive lower penalty for missing earnings target. Further, we show that CSR firms, comparing with non-CSR counterparts, have higher likelihood to miss the target. Overall, these results are consistent with the hypothesis that investors treat CSR firms differently, presumably because of different investment horizons or (and) because of their closer relations and higher trust in CSR firms.

Another possible reason for receiving lower penalty could be that CSR firms use alternative channels to establish stronger connections with investors to ensure lower penalty for missing earnings target. For instance, Bhattacharya et al. (1979) argue that dividends can serve as a signal of expected cash flow. Further, shareholders that constantly receive higher dividends may be less critical of earnings targets. Untabulated results show that CSR firms do not have different dividends, repurchases, and total and net payout yield. This result provides additional support for the hypothesis that CSR itself is an important determinant for investors, rather than that CSR firms have different communication channels with their stakeholders.

2.5.5 Instrumenting CSR with Other Constituency Acts

In this study, we examine the potential impact of CSR on negative (positive) price revision in the time when a firm misses (beats) analyst consensus forecast. The results provided above indicate that in the group of firms that misses the target, CSR firms are penalized less in terms of negative price revision. However, finding a positive impact of CSR on negative price revision may be spurious if such a relationship is driven by unobserved firm characteristics that improve CSR performance and mitigate negative market reaction to missing the target. In other words, CSR reflects a firm choice, and this choice may correlate with some unobservable firm characteristics that also affect negative price revision. To obtain a consistent estimate of the impact of CSR on the magnitude of negative price revision, we follow Flammer and Kacperczyk (2016b) methodology and apply 2SLS approach with predicted values of CSR as instrument.

Following Flammer and Kacperczyk (2016b), we apply enactment of constituency statutes in 34 states between 1984-2006 as a quasi-natural experiment. This law allows managers to consider not only shareholders', but also stakeholders' interests when making business decisions. We apply a differences-in-difference approach to estimate the effect of constituency statutes on negative price revision. Table 2.8 presents the results of this estimation. These findings confirm the previous result that in the group of firms that miss the target, CSR firms are exposed to lower negative price revision. Further, the results in even columns show that in the group of firms that MB the target, comparing with non-CSR firms, CSR firms do not receive extra rewards. This result is consistent with the hypothesis that CSR serves as an 'insurance' and pays off only in the times of crisis.

2.6 Conclusion

This paper examines whether CSR affects penalty (reward) for missing (beating) analyst consensus forecast. Extending existing theories, we argue that first, investors in CSR firms, on average, have long-term investment horizon and thus are less critical of short-term financial performance, including target beating. Second, CSR firms have closer relations with their stakeholders, which ensures that when CSR firms miss the target, stakeholders have less concerns regarding future

prospects and, thus, penalize these firms less.

To empirically test this theoretical prediction, we compare CAR of CSR and non-CSR firms that barely miss, meet or beat analyst forecast. We show that in the group of firms that miss the target, comparing with non-CSR firms, CSR firms experience a less severe negative price revision. However, in the group of firms that MB the target, CSR firms do not receive a superior reward. This result is consistent with the hypothesis that CSR serves as an 'insurance' protection and thus pays off only in times of crisis.

APPENDIX 2.A: Variable Definition

Variable	Variable Definitions
Dummy Variables	
miss	Dummy variable equals 1 if a firm miss the last analyst consensus forecast before earnings announcement (forecast, hereafter) by 1 or 2 cents and 0 if a firm exactly meet or beat the forecast by 1 or 2 cents (IBES).
beat	Dummy variable equals 1 if a firm beat the forecast by 1 or 2 cents and 0 if a firm exactly meet or miss the forecast by 1 or 2 cents (IBES).
meet	Dummy variable equals 1 if a firm exactly meets the forecast and 0 if a firm miss the forecast by 1 or 2 cents or beat the forecast by 1 or 2 cents (IBES).
meet_beat	Dummy variable equals 1 if a firm exactly meet or beat the forecast by 1 or 2 cents and 0 if a firm miss the forecast by 1 or 2 cents (IBES).
CSR Variables	
CSR_SCORE	Net score of CSR ratings, measured as total strengths minus total concerns in five social rating categories of KLD ratings data: community, diversity, employee relations, environment, and product.
High_CSR	Is a dummy variable equals 1 for firms that have CSR_SCORE that is above the median withing industry (2-digit SIC) and year and 0 otherwise.
Low_CSR	Is a dummy variable equals 1 for firms that have CSR_SCORE that is below the median withing industry (2-digit SIC) and year and 0 otherwise.
STRENGTHS	Net score of CSR ratings, measured as sum of total strengths in five social rating categories of KLD ratings data: community, diversity, employee relations, environment, and product.
CONCERNS	Net score of CSR ratings, measured as sum of total concerns in five social rating categories of KLD ratings data: community, diversity, employee relations, environment, and product.
Earnings Management Variables	
AAC	Signed discretionary accruals, where discretionary accruals are computed through the cross-sectional modified Jones model adjusted for performance (Kim et al. 2012).
ABS_DA	Absolute value of discretionary accruals, where discretionary accruals are computed through the cross-sectional modified Jones model adjusted for performance (Kim et al. 2012).
AB_CFO	The level of abnormal cash flows from operations (Kim et al. 2012).
AB_PROD	The level of abnormal production costs, where production costs are defined as the sum of cost of goods sold and the change in inventories (Kim et al. 2012).
AB_EXP	The level of abnormal discretionary expenses, where discretionary expenses are the sum of R&D expenses, advertising expenses, and SG&A expenses (Kim et al. 2012).
REM	$REM = AB\_PROD - AB\_CFO$.

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Variable	Variable Definitions
Control Variables	
LT	Is a dummy variable equals 1 for firms that have average number of long-term investors (following Bushee and Noe (2000) we define 'quasi-indexers' and 'dedicated holders' as long-oriented investors) that is above the median in a given year and 0 otherwise.
ST	Is a dummy variable equals 1 for firms that have average number of long-term investors (following Bushee and Noe (2000) we define 'quasi-indexers' and 'dedicated holders' as long-oriented investors) that is below the median in a given year and 0 otherwise.
$High\_An$	Is a dummy variable that takes the value 1 whenever a firm's number of analysts is higher than the median of a given year, industry and total assets' quartile.
Low_An	Is a dummy variable that takes the value 1 whenever a firm's number of analysts is lower than the median of a given year, industry and total assets' quartile.
$SIZE$	Natural logarithm of the market value of equity (MVE) (Kim et al. 2012).
MB	Market-to-book equity ratio, measured as MVE/BVE, where BVE is the book value of equity (Kim et al. 2012).
ADJ_ROA	Industry-adjusted ROA, where ROA is measured as income before extraordinary items, scaled by lagged total assets (Kim et al. 2012).
LEV	Long-term debt scaled by total assets (Kim et al. 2012).
RD_INT	R&D intensity (R&D expense/net sales) for the year (Kim et al. 2012).
AD_IND_INT	Advertising intensity for the two-digit SIC code industry for the year (Kim et al. 2012).
CH	Cash holding is the ratio of cash and short-term investments to the book value of assets (Flammer 2015).
ROA	Is the ratio of income before extraordinary items to the book value of assets (Flammer 2015).
ROE	Is the ratio of income before extraordinary items to the lagged Common/Ordinary Equity-Total.
$EARN$	Earnings before extraordinary items/beginning total asset (Huang et al. 2014).
BM	Book-to-market ratio measured at the fiscal year-end (Huang et al. 2014).

Table 2.1: Descriptive Statistics.

Variable	Obs.	Mean	S.D.	P_{25}	P_{50}	P_{75}
CSR_SCORE	977	-.103	.494	-.5	-.107	.143
high_CSR	977	.43	.495	0	0	1
miss_02	977	.267	.443	0	0	1
meet_02	977	.245	.43	0	0	0
beat_02	977	.488	.5	0	0	1
car	977	-.005	.076	-.044	-.003	.036
car_ff3	977	-.004	.076	-.045	-.003	.038
car_ff4	977	-.003	.076	-.045	-.003	.038
MB	972	3.588	4.144	1.685	2.696	4.448
SIZE	977	6.855	1.439	5.829	6.576	7.615
LEV	971	.15	.202	0	.055	.248
CH	977	.248	.234	.052	.176	.379
ROA	977	.041	.126	.026	.056	.092

Table 2.1 shows the descriptive statistics of the variables used in the main specifications of the paper. The sample is composed of 640 unique firms in an unbalanced panel that ranges from the year 2000 until the year 2013, with a maximum number of firm-year observations of 977.

Table 2.2: Cross-correlation table.

Variables	CSR	High_CSR	Miss	Meet	Beat	CAR[-1,1]	CAR[-1,1]_FF3	CAR[-1,1]_FF4	M2B	Size	Leverage	Cash	ROA
CSR	1.000												
High_CSR	0.618	1.000											
	(0.000)												
Miss	0.048	0.043	1.000										
	(0.017)	(0.032)											
Meet	-0.004	0.006	-0.376	1.000									
	(0.856)	(0.783)	(0.000)										
Beat	-0.042	-0.046	-0.624	-0.490	1.000								
	(0.037)	(0.024)	(0.000)	(0.000)									
CAR[-1,1]	0.024	0.047	0.024	-0.014	-0.010	1.000							
	(0.432)	(0.132)	(0.434)	(0.653)	(0.758)								
CAR[-1,1]_FF3	0.020	0.046	0.029	-0.025	-0.004	0.985	1.000						
	(0.519)	(0.139)	(0.350)	(0.417)	(0.896)	(0.000)							
CAR[-1,1]_FF4	0.016	0.045	0.030	-0.029	-0.002	0.981	0.995	1.000					
	(0.614)	(0.147)	(0.328)	(0.347)	(0.952)	(0.000)	(0.000)						
M2B	0.101	0.039	0.002	-0.020	0.015	-0.006	-0.016	-0.014	1.000				
	(0.000)	(0.054)	(0.920)	(0.321)	(0.459)	(0.836)	(0.604)	(0.653)					
Size	0.369	0.242	-0.003	-0.007	0.009	0.043	0.039	0.040	0.159	1.000			
	(0.000)	(0.000)	(0.869)	(0.731)	(0.657)	(0.166)	(0.208)	(0.194)	(0.000)				
Leverage	-0.005	0.031	0.033	0.012	-0.040	-0.012	-0.014	-0.017	-0.067	0.171	1.000		
	(0.800)	(0.130)	(0.109)	(0.571)	(0.047)	(0.691)	(0.648)	(0.579)	(0.001)	(0.000)			
Cash	-0.026	-0.061	-0.018	0.008	0.010	-0.045	-0.043	-0.033	0.221	-0.231	-0.315	1.000	
	(0.199)	(0.003)	(0.373)	(0.701)	(0.607)	(0.147)	(0.167)	(0.284)	(0.000)	(0.000)	(0.000)		
ROA	0.127	0.094	0.007	-0.028	0.017	0.093	0.094	0.091	0.008	0.260	-0.142	-0.396	1.000
	(0.000)	(0.000)	(0.733)	(0.174)	(0.409)	(0.003)	(0.002)	(0.003)	(0.711)	(0.000)	(0.000)	(0.000)	

Table 2.2 shows the correlation among the main variables in the study.

Table 2.3: The Role of CSR on Mediating the Market Reaction to Earnings Announcements

	(1) CAR[-1,1]	(2) CAR[-1,1]	(3) CAR[-1,1]	(4) CAR[-1,1]	(5) CAR[-1,1]	(6) CAR[-1,1]	(7) CAR[-1,1]	(8) CAR[-1,1]	(9) CAR[-1,1]
CSR_Miss	**0.003****	**0.003****	**0.002**						
	(2.033)	**(2.163)**	**(1.433)**						
CSR_Meet_Beat	0.001	0.001	0.001						
	(0.889)	(0.744)	(0.727)						
High_CSR_Miss				**0.016****	**0.016****	**0.016****	**0.015***	**0.014***	**0.013**
				(2.175)	**(2.160)**	**(2.118)**	**(1.914)**	**(1.949)**	**(1.648)**
High_CSR_Meet_Beat				0.008	0.008	0.008	0.006	0.005	0.005
				(1.304)	(1.380)	(1.438)	(0.634)	(0.573)	(0.514)
Low_CSR_Miss				0.001	0.003	0.003			
				(0.151)	(0.275)	(0.338)			
Low_CSR_Meet_Beat							-0.001	-0.003	-0.003
							(-0.151)	(-0.275)	(-0.338)
Size	-0.003***	-0.003**	-0.003**	-0.003**	-0.004**	-0.003**	-0.003**	-0.004***	-0.003**
	(-2.603)	(-2.741)	(-2.282)	(-2.351)	(-2.715)	(-2.376)	(-2.353)	(-2.716)	(-2.377)
MB	-0.002***	-0.002***	-0.002***	-0.002**	-0.002***	-0.002**	-0.002**	-0.002***	-0.002**
	(-3.053)	(-3.278)	(-3.321)	(-2.553)	(-2.604)	(-2.486)	(-2.569)	(-2.625)	(-2.543)
ROA	0.030	0.031	0.033	0.031	0.032	0.034	0.031	0.032	0.034
	(1.084)	(1.084)	(1.148)	(1.126)	(1.125)	(1.183)	(1.126)	(1.125)	(1.183)
Leverage	-0.002	-0.000	-0.000	-0.002	-0.001	-0.000	-0.002	-0.001	-0.000
	(-0.156)	(-0.031)	(-0.000)	(-0.171)	(-0.045)	(-0.002)	(-0.171)	(-0.045)	(-0.002)
Cash	-0.012	-0.010	-0.006	-0.012	-0.010	-0.006	-0.012	-0.010	-0.006
	(-0.862)	(-0.822)	(-0.492)	(-0.837)	(-0.793)	(-0.477)	(-0.837)	(-0.793)	(-0.477)
Observations	977	977	977	977	977	977	977	977	977
Model	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Table 2.3 shows the results from our main specification. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year and industry dummies and standard errors are clustered at the firm and year level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem. From Columns 1 to 3 we use a continuous measure of CSR from KLD as: Strengths - Concerns. Miss is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just below the median analyst consensus. Miss_Beat is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just above or on the median analyst consensus.

Table 2.4: The Role of Long-Term Institutional Investors on the Market Reaction of Earnings Announcements for High CSR firms.
Table 2.4 shows the results from our main specification for a cross section of firms with a different levels of Long-Term Institutional Investors. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year and industry dummies and standard errors are clustered at the firm and year level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem. From Columns 1 to 3 we use a continuous measure of CSR from KLD as: Strengths - Concerns. Miss is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just below the median analyst consensus. Miss_Beat is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just above or on the median analyst consensus. High_LT is a dummy variable that takes the value 1 whenever a firm's ownership structure is composed of long-term institutional investors in a level that is higher than the median of a given year. We measure long-term institutional investors with Brian Bushee's definition of dedicated and quasi-indexer investors, i.e., those that have low turnover and low (dedicated) diversification and high (quasi-indexers) diversification.

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
CSR_Miss_LT	**0.003*** **	**0.003*** **	**0.001**						
	(2.942)	**(2.759)**	**(1.528)**						
CSR_M_B_LT	0.001	0.001	0.001						
	(0.847)	(0.776)	(0.648)						
CSR_Miss_ST	0.003	0.003	0.003						
	(0.626)	(0.745)	(0.661)						
CSR_M_B_ST	0.001	0.001	0.001						

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Table 2.4 *Continued from previous page*

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
	(0.680)	(0.558)	(0.652)						
High_CSR_Miss_LT				**0.026*** **	**0.027*** **	**0.026*** **	**0.022*** **	**0.022*** **	**0.017***
				(2.757)	**(2.845)**	**(2.649)**	**(2.668)**	**(2.623)**	**(1.839)**
High_CSR_Miss_ST				0.020	0.022	0.022	0.016	0.016	0.014
				(1.561)	(1.652)	(1.710)	(0.919)	(0.933)	(0.794)
High_CSR_M_B_LT				**0.017***	**0.019** **	**0.019***	**0.013**	**0.014**	**0.011**
				(1.732)	**(1.982)**	**(1.980)**	**(0.832)**	**(0.898)**	**(0.701)**
High_CSR_M_B_ST				0.009	0.010	0.011	0.005	0.004	0.002
				(1.109)	(1.230)	(1.374)	(0.380)	(0.329)	(0.187)
Low_CSR_Miss_ST				0.011	0.013	0.014	0.007	0.008	0.005
				(0.878)	(1.077)	(1.069)	(0.534)	(0.574)	(0.378)
Low_CSR_M_B_LT				0.011	0.014	0.016	0.008	0.009	0.007
				(1.559)	(1.584)	(1.571)	(0.595)	(0.689)	(0.563)
Low_CSR_Miss_LT				0.004	0.006	0.009			
				(0.301)	(0.446)	(0.694)			
Low_CSR_M_B_ST							-0.004	-0.006	-0.009
							(-0.301)	(-0.445)	(-0.693)

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Table 2.4 *Continued from previous page*

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
CONTROLS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	969	969	969	969	969	969	969	969	969
Model	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.03	0.03

Table 2.5: The difference in terms of earnings management between High CSR firms that miss analysts' targets and Low CSR firms that meet or beat analysts' targets.

	(1) AAC	(2) ABS_DA	(3) AB_EXP	(4) AB_CFO	(5) AB_PROD	(6) REM
High_CSR_Miss	-0.01	-0.00	0.04*	0.01	-0.03**	-0.05***
	(-0.65)	(-0.61)	(2.06)	(1.46)	(-2.13)	(-3.10)
High_CSR_Meet_Beat	-0.00	0.00	0.04*	0.01	-0.03***	-0.05***
	(-0.47)	(0.68)	(1.94)	(1.28)	(-3.17)	(-4.04)
Low_CSR_Miss	0.00	0.00	0.00	-0.01	0.00	0.01
	(0.75)	(0.00)	(0.26)	(-0.85)	(0.16)	(0.34)
Size	-0.00	-0.00***	0.03***	0.00	-0.01***	-0.01**
	(-1.41)	(-2.97)	(4.21)	(0.37)	(-3.24)	(-2.70)
MB	-0.00	0.00**	0.00	0.00***	-0.00**	-0.01***
	(-1.37)	(2.85)	(1.29)	(3.50)	(-2.84)	(-3.73)
ROA	0.01	-0.08***	-0.22***	0.31***	-0.27***	-0.55***
	(0.37)	(-4.51)	(-4.68)	(6.37)	(-3.99)	(-5.41)
Leverage	0.01	-0.01	0.02	-0.06**	0.04	0.10**
	(0.53)	(-1.49)	(0.58)	(-2.86)	(1.23)	(2.63)
Cash	0.02	0.01	0.07	-0.03	-0.00	0.02
	(0.98)	(0.66)	(1.59)	(-1.65)	(-0.11)	(0.51)
Constant	0.03	0.07***	-0.24***	0.01	0.09***	0.08*
	(1.75)	(6.76)	(-5.37)	(0.46)	(3.21)	(2.12)
Observations	969	969	969	969	969	969
Industry*Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.02	0.10	0.08	0.28	0.11	0.21

Table 2.5 shows the results from the following analysis: whether firms that miss (meet or beat) analysts' targets and exhibit high (low) CSR engage in earnings management. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year times industry dummies and standard errors are clustered at the firm and year level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem.

Table 2.6: The Role of Analyst Following on the Market Reaction of Earnings Announcements for High CSR firms.
Table 2.6 shows the results from our main specification for a cross section of firms with a different levels of Analysts Following that given firm. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year and industry dummies and standard errors are clustered at the firm and year level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem. From Columns 1 to 3 we use a continuous measure of CSR from KLD as: Strengths - Concerns. Miss is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just below the median analyst consensus. Miss_Beat is a dummy variable that takes the value 1 whenever a firm reported earnings per share of maximum 2 cents just above or on the median analyst consensus. High_Anal is a dummy variable that takes the value 1 whenever a firm's number of analysts following is higher than the median of a given year, industry and total assets' quartile.

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
CSR_Miss_High_An	0.002	0.003	0.002						
	(1.084)	(1.520)	(1.045)						
CSR_M_B_High_An	-0.000	-0.000	-0.000						
	(-0.096)	(-0.084)	(-0.202)						
CSR_Miss_Low_An	**0.003***	**0.003**	**0.002**						
	(1.868)	**(1.577)**	**(1.131)**						
CSR_M_B_Low_An	**0.003****	**0.003***	**0.003***						
	(2.187)	**(1.767)**	**(2.004)**						
High_CSR_Miss_High_An				0.013	0.013	0.012	0.010	0.013	0.012

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Table 2.6 *Continued from previous page*

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
				(1.185)	(1.121)	(1.049)	(0.847)	(1.068)	(1.023)
H_CSR_Miss_Low_An				**0.020*** **	**0.016** **	**0.015** **	**0.017***	**0.016**	**0.014**
				(3.171)	**(2.609)**	**(2.201)**	**(1.710)**	**(1.454)**	**(1.329)**
H_CSR_M_B_High_An				0.001	0.000	-0.001	-0.002	0.000	-0.001
				(0.116)	(0.011)	(-0.055)	(-0.195)	(0.004)	(-0.082)
H_CSR_M_B_Low_An				0.017	0.013	0.013	0.014*	0.013	0.013
				(1.539)	(1.234)	(1.195)	(1.691)	(1.497)	(1.474)
L_CSR_M_B_High_An				0.003	0.000	0.000			
				(0.212)	(0.004)	(0.015)			
L_CSR_M_B_Low_An				-0.001	-0.003	-0.004	-0.004	-0.003	-0.004
				(-0.068)	(-0.268)	(-0.368)	(-0.439)	(-0.326)	(-0.467)
L_CSR_Miss_High_An				0.005	0.002	0.003	0.002	0.002	0.002
				(0.453)	(0.194)	(0.213)	(0.219)	(0.208)	(0.212)
L_CSR_Miss_Low_An							-0.003	-0.000	-0.000
							(-0.211)	(-0.004)	(-0.015)
Size	-0.003**	-0.003**	-0.003**	-0.003*	-0.003**	-0.003*	-0.003*	-0.003**	-0.003*
	(-2.361)	(-2.522)	(-2.093)	(-1.738)	(-2.118)	(-1.878)	(-1.741)	(-2.113)	(-1.875)

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Table 2.6 *Continued from previous page*

	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]	CAR[-1,1]
M2B	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(-3.033)	(-3.291)	(-3.249)	(-2.988)	(-2.973)	(-2.963)	(-2.993)	(-2.970)	(-2.957)
ROA	0.031	0.031	0.034	0.030	0.032	0.034	0.030	0.032	0.034
	(1.104)	(1.103)	(1.169)	(1.091)	(1.112)	(1.178)	(1.091)	(1.112)	(1.178)
Leverage	-0.001	0.000	0.000	-0.001	-0.000	0.001	-0.001	-0.000	0.001
	(-0.105)	(0.001)	(0.037)	(-0.110)	(-0.013)	(0.040)	(-0.110)	(-0.013)	(0.040)
Cash	-0.012	-0.010	-0.007	-0.011	-0.010	-0.006	-0.011	-0.010	-0.006
	(-0.859)	(-0.824)	(-0.494)	(-0.780)	(-0.747)	(-0.440)	(-0.780)	(-0.747)	(-0.440)
Observations	969	969	969	969	969	969	969	969	969
Model	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4	Mkt Adj	FF3	FF4
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.02	0.02

Table 2.7: The impact of High CSR on the propensity to miss, beat or meet analysts' targets.

	(1)	(2)	(3)	(4)	(5)	(6)
	Ordinary Least Squares			LOGIT		
	Miss	Beat	Meet	Miss	Beat	Meet
High_CSR	0.08***	-0.06**	-0.02	0.24***	-0.18**	-0.04
	(4.04)	(-2.18)	(-0.76)	(2.63)	(-2.57)	(-0.35)
Size	0.00	0.00	-0.00	-0.03	0.04	-0.02
	(0.17)	(0.03)	(-0.19)	(-1.03)	(0.82)	(-0.26)
MB	-0.00	0.00	-0.00	-0.01	0.02	-0.01
	(-1.03)	(1.68)	(-0.75)	(-1.08)	(1.48)	(-0.75)
ROA	-0.02	0.11*	-0.09	0.13	0.22	-0.48*
	(-0.19)	(1.80)	(-1.22)	(0.31)	(0.82)	(-1.74)
Leverage	0.02	-0.01	-0.02	0.31	-0.00	-0.39
	(0.32)	(-0.10)	(-0.28)	(1.11)	(-0.00)	(-1.08)
Cash	0.03	-0.07	0.04	-0.15	0.18	-0.08
	(0.46)	(-0.91)	(0.40)	(-0.60)	(0.70)	(-0.22)
Constant	0.37***	0.39***	0.24***	0.79	-1.10**	-2.20*
	(9.20)	(7.11)	(3.53)	(1.13)	(-2.29)	(-1.83)
Observations	969	969	969	969	969	969
Industry*Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R2				0.03	0.03	0.03
Adj. R2	0.03	0.03	0.01			

Table 2.7 shows the results from our main specification. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year times industry dummies and standard errors are clustered at the firm and year level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem.

Table 2.8: Instrumenting CSR with Other Constituencies Acts

	(1) CAR[-1,1]	(2) CAR[-1,1]	(3) CAR[-1,1]	(4) CAR[-1,1]	(5) CAR[-1,1]	(6) CAR[-1,1]
Predicted_CSR	0.015***	-0.022***	0.019***	-0.021***	0.018***	-0.020***
	(3.046)	(-4.000)	(3.321)	(-4.031)	(3.229)	(-3.716)
Size	-0.008**	0.009**	-0.011**	0.008**	-0.010**	0.008**
	(-2.471)	(2.627)	(-2.910)	(2.718)	(-2.726)	(2.699)
M2B	-0.003***	-0.002	-0.003***	-0.001	-0.003***	-0.002*
	(-7.222)	(-1.597)	(-7.228)	(-1.615)	(-7.100)	(-1.735)
ROA	0.028*	0.006	0.019	0.010	0.017	0.013
	(1.894)	(0.316)	(1.256)	(0.711)	(1.237)	(0.922)
Leverage	0.016	-0.025***	0.021	-0.023**	0.023	-0.022**
	(0.701)	(-2.963)	(0.919)	(-2.660)	(0.978)	(-2.579)
Cash	-0.022**	-0.016*	-0.023**	-0.015*	-0.019**	-0.010
	(-2.432)	(-1.981)	(-2.529)	(-1.964)	(-2.291)	(-1.361)
Observations	269	753	269	753	269	753
Miss	Yes	No	Yes	No	Yes	No
Model	Mkt Adj	Mkt Adj	FF3	FF3	FF4	FF4
Incorporation State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
First Stage F-Stat	23.13	133	23.13	133	23.13	133
Adj. R2	0.09	0.26	0.17	0.23	0.16	0.22

Table 2.8 shows the results from using Other Constituencies Acts to instrument the variable CSR. Coefficients are reported with t-statistics below in parentheses. ***, ** and * imply a significance level of 1%, 5% and 10% respectively. All regressions include year and incorporation state dummies and standard errors are clustered at the incorporation state level to allow for cross-correlation and autocorrelation in the covariance matrix of standard errors. All control variables are lagged one period to avoid a bad controls problem. From Columns 1 to 6 we use a continuous measure of CSR from KLD as: Strengths - Concerns, instrumented by Other Constituencies following Flammer and Kacperczyk (2017). Odd columns represent a subsample of firms that miss earnings targets in a given year and even columns represent firms that meet or beat earnings targets.

Chapter 3

Different Similarities and Similar Differences. New Evidence on Corporate Social Responsibility

3.1 Introduction

Corporate Social responsibility (CSR) has become a strategic concern for firms, responding to the demand from key stakeholders and investors. For instance, the percentage of S&P 500 companies that publish sustainability or corporate responsibility reports has increased from 20% in 2011 to 86% in 2018.[1] Further, a survey by The Global Impact Investing Network says that over the last 20 years the number of managers that provide ESG (environmental, social, and government) strategies has increased by 400% (Lofts 2018). Given this growing importance, prior research has extensively

[1] According to The Governance & Accountability Institute https://www.sustainability-reports.com/86-of-sp-500-index-companies-publish-sustainability-responsibility-reports-in-2018/

studied the effect of firms' CSR activities[2] on financial performance,[3] risk,[4] reporting quality,[5] and relations with stakeholders.[6] However, among firms with similar CSR performance there may exist heterogeneity in terms of their CSR strategies. In this paper, I focus on the heterogeneous properties that arise in firms that have the same CSR performance. In particular, I aim to address the following questions: Do heterogeneous CSR strategies that underpin the same CSR performance matter? What can we learn about CSR beyond CSR performance?

Following prior literature, I define CSR as voluntary stakeholder-oriented actions that (1) aim to improve social conditions, (2) go beyond compliance or legal requirements, and (3) extend above solely profit maximization (McWilliams and Siegel 2000; Godfrey et al. 2009; Bénabou and Tirole 2010; Liang and Renneboog 2017). For instance, firms' practices aimed at reducing carbon footprint, improving employee policies, and diversity in the workplace can be considered as CSR dimensions, which together contribute to firms' CSR performance. Building on this definition, I argue, that within the same CSR performance firms may have different CSR strategies depending on the combinations of CSR dimensions.

Prior research has already studied CSR performance and proposed to study independently positive (strengths) and negative (concerns) aspects of corporate social actions as they may reflect different underlying mechanisms (e.g., Kacperczyk (2009), Kim et al. (2014), Ioannou and Serafeim (2015), and Fernando et al. (2017)) or focus on a specific CSR dimension (e.g., Clarkson et al. (2004) and Fernando et al. (2017)). I continue this line of research by arguing that firms with the same CSR performance may have different number of strengths and concerns, which reflect various CSR strategies.[7]

Anecdotal evidence points toward this conjecture. To illustrate, I use the example of

[2] The terms "CSR activities," "CSR performance," "CSR engagement," "CSR involvement," "CSR practices" have all been used interchangeably, to describe firms' commitment to CSR. CSR performance is defined as a sum of positive and negative corporate actions along different social dimensions. A more precise definition of CSR performance is given in Section 3.3.2.

[3] e.g., Lev et al. (2010), Cheng et al. (2014), Lins et al. (2017), and Shiu and Yang (2017)

[4] e.g., Godfrey et al. (2009), Kim et al. (2014), Lins et al. (2017), Shiu and Yang (2017), and Albuquerque et al. (2018)

[5] e.g., Kim et al. (2012)

[6] e.g., Godfrey (2005), Godfrey et al. (2009), Lev et al. (2010), and Flammer and Luo (2017)

[7] For instance, firms A and B have CSR performance equal one. However, firm A has only one strength while firm B has three strengths and two concerns. I argue that firms A and B have different CSR strategies that reflect additional to CSR performance information.

Nike, a public US company that sells their athletic footwear and apparel virtually in all countries around the world (Nike 2019b). Nike has long been suspected of child labor, sweatshops, and block of basic labor rights particularly in Nike's Asian factories. According to The Guardian, between 25% and 50% of the Nike's Asian factories restrict access to toilets and drinking water during the work day and deny workers at least one day off in seven (Teather 2005). Nike's culture of sexual harassment and gender bias has led to a number of gender discrimination lawsuits from their former employees (Hsu 2018). At the same time, Nike is constantly recognized as one of the most environment-friendly companies in the world. According to the Nike Impact Report from 2019, they continuously minimize their environmental footprint by using recycled materials and consuming renewable energy (Nike 2019a). According to this example, Nike has a slightly negative CSR performance, as high positive social actions are outweighed with negative ones. First, I argue that a firm's positive and negative activities as well as actions along different social dimensions are interconnected. Second, I posit that another firm with the same CSR performance but with different number of positive and negative social actions (e.g., a firm that has only one concern) has different CSR strategy.

I test my predictions using a large sample US publicly-listed firms over the period 2003 to 2013. My CSR data is obtained from MSCI (formerly known as KLD), which rates firms' CSR performance on a variety of strengths and concerns along different social dimensions. I calculate the score for each dimension by taking the difference between corresponding strengths and concerns. I measure average firms' CSR performance (CSR_Score) by adding the scores of the individual dimensions. Following the prior research, I consider firms with the same CSR_Score as firms that have similar average CSR performance. I proxy potential heterogeneity among CSR strategies by calculating summation of the strengths and concerns for firms within the same CSR_Score (net_CSR_Score). I argue that regardless of the average CSR performance, firms that are in different net_CSR_Score quantiles may have different CSR strategies.

I document the following findings. First, I find that firms with the same average CSR performance but with different number of strengths and concerns vary among different firms' characteristics. Specifically, firms that have higher total numbers of strengths and concerns (hereafter H_CSR) are older, bigger, more profitable, have less cash and more leverage, and are less research in-

tense. Second, I show that comparing with the firms that have the same CSR performance, H_CSR firms have higher future CSR performance. Finally, I show that H_CSR firms have a negative association with future accounting performance and stock returns even controlling for CSR performance. These results are consistent with the prediction that net_CSR_Score provides additional information about firms' CSR strategies, which is complementary to CSR performance.

My results indicate that firms with similar CSR performance vary across their CSR strategies, which are associated with different firms' characteristics, future CSR and financial performance. I add to the literature that studies how firms differ along different CSR dimensions. Prior research highlights the importance of studying independently strengths and concerns (e.g., Kacperczyk (2009), Kim et al. (2014), Ioannou and Serafeim (2015), and Fernando et al. (2017)) or focusing on individual CSR dimensions (e.g., Clarkson et al. (2004) and Fernando et al. (2017)). My contribution to this literature is twofold. First, I show that there is a heterogeneity between firms with the same average CSR performance. Second, I show that the heterogeneity between CSR strategies has an association with future CSR and financial performance, which does not depend on CSR performance. I argue that performances in different social dimensions may be interconnected and, thus, studying them individually may lead to biased results. I contribute to this literature by showing that different CSR strategies may lie between different dimensions (or between strengths and concerns), thus, should be considered collectively.

The paper proceeds as follows. Section 3.2 reviews the literature and presents our hypotheses. Section 3.3 describes the data and methodology. Section 3.4 presents results and Section 3.5 concludes.

3.2 Literature Review and Hypotheses Development

A large academic literature on CSR widely uses different databases to measure CSR performance. ASSET 4,[8] Sustainalytics,[9] Bloomberg ESG,[10] MSCI, IVA[11] and MSCI (formerly known

[8] e.g., Stellner et al. (2015), El Ghoul et al. (2016), Gibson et al. (2019), and Görgen et al. (2019)
[9] e.g., Verheyden et al. (2016), Gibson et al. (2019), Görgen et al. (2019), and Engle et al. (2020)
[10] e.g., Gibson et al. (2019)
[11] e.g., Cai et al. (2016), Ferrell et al. (2016), Liang and Renneboog (2017), and Gibson et al. (2019)

as KLD)[12] are among the most commonly used CSR data providers.

The KLD database has a number of advantages over other sources of CSR data, as it covers a large number of US firms and classifies CSR performance along seven social dimensions (environment, employee relations, community,corporate governance, diversity, human rights, and product) and six controversial business issues (alcohol, firearms, gambling, military, nuclear, and tobacco). One of the primary measures of firms' average involvement in CSR activity is CSR_Score, which is calculated by subtracting concern- related from strength-related measures among different KLD social dimensions.[13]

Abundant empirical evidence from CSR_Score-based studies suggests that CSR engagement improves relations with stakeholders and helps to protect against idiosyncratic (Godfrey et al. 2009; Shiu and Yang 2017) and systematic risks (Lins et al. 2017; Albuquerque et al. 2018). With regard to the financial performance, a number of studies find a positive association between CSR and Tobin's Q for firms with high consumer awareness (Servaes and Tamayo 2013) and for best-in-class (benchmarking against CSR performance in industry peers) firms (Awaysheh et al. 2020). Further, Deng et al. (2013) argue that CSR is an important determinant of merger performance and show that high CSR acquirers have higher merger announcement returns, and larger increases in post-merger long-term operating performance. From an accounting perspective, CSR firms are associated with better financial reporting proxied by earnings management, real operating activities, and the likelihood of SEC investigation (Kim et al. 2012). Finally, evidence from Gao et al. (2014) suggests that executives from CSR firms are more likely to refrain from insider trading activities and, comparing with executives from non-CSR firms, are less likely to trade prior future news and profit significantly less from insider trades.

The question of whether there is a heterogeneity of CSR strategies among firms with the same CSR performance has received far less research attention to date. Numerous studies

[12] e.g., Godfrey et al. (2009), Kacperczyk (2009), Barnett and Salomon (2012), Kim et al. (2012), Gao et al. (2014) Becchetti et al. (2015), Flammer and Kacperczyk (2016a), Fernando et al. (2017), Flammer and Luo (2017), Lins et al. (2017), Flammer and Kacperczyk (2019), Gloßner (2019), Hegde and Mishra (2019), T. Chen et al. (2020), Awaysheh et al. (2020), and Engle et al. (2020)

[13] For instance, Kim et al. (2012) construct CSR_Score by subtracting concern- related from strength- related measures among five social dimensions: environment, employee relations, community, diversity, and product. Lins et al. (2017) use the same specification, but instead of product dimension use human rights one. Albuquerque et al. (2018) use all social dimensions but corporate governance.

have discussed the importance of distinguishing between strengths and concerns (e.g., Kacperczyk (2009), Kim et al. (2014), Ioannou and Serafeim (2015), and Fernando et al. (2017)). These authors argue that 'doing good' (strengths) and 'doing no harm' (concerns) have a different nature and underlying mechanisms. For instance, Fernando et al. (2017) emphasize that only environmental concerns are associated with firms' risk and cost reduction, while environmental strengths are not associated with risk management practices. However, if strengths, concerns, and social dimensions are interconnected, the attempt to consider them individually may lead to biased results.

Anecdotal evidence points toward a positive relationship between corporate social responsibility (CSR) and irresponsibility (CSiR). As a case in point, consider the BP oil spill in the Gulf of Mexico on April 20, 2010. Two years before the incident, in 2008, the CEO of BP, Tony Hayward, during the Annual General Meeting, announced that BP's safety record was among the best in the oil and gas industry. Under the leadership of Mr. Hayward, "BP ran operational safety training sessions for its employees and encouraged a culture of safety in an effort to attend to key stakeholders such as employees, the community and the environment."[14] However, the oil spill of 2010, destroyed BP's positive safety records and revealed a lack of ethical and safety standards that may have prevented the largest marine oil spill in the history.[15] Formally, based on the moral licensing research, Ormiston and Wong (2013) argue that past CSR performance helps managers to accrue moral credits and become less vigilant toward stakeholders' needs in the future. Based on this preposition, the authors find a positive association between past CSR performance and subsequent CSiR.

According to this line of thought, firms with the same CSR performance (CSR_Score) may vary along other CSR dimensions that may reflect different CSR strategies. For instance, within the same CSR_Score firms may have different summation of the strengths and concerns.[16] I state this prediction formally as my first hypothesis:

H1: *Firms with the same CSR performance have heterogeneous CSR strategies.*

[14] The Guardian (Dec 10th, 2013). `https://www.theguardian.com/sustainable-business/comapanies-csr-policies-corporate-irresponsibility-new-study`

[15] BBC News (January 6th, 2011) `https://www.bbc.com/news/world-us-canada-12124830`

[16] For instance, within CSR_Score = 0, all firms have the same proportion between strengths and concerns (1:1). However, one firm may have 1 strength and 1 concern, while another one may have 3 strengths and 3 concerns.

With regard to the future CSR performance, I hypothesize that it varies for firms with the same current CSR performance, but heterogeneous CSR strategies. The motivation behind this assumption is twofold. First, different CSR strategies (e.g., real/window dressing,[17] active/passive[18]) may directly impact future CSR performance. Second, CSR strategies may correlate with firms' characteristics such as a capital structure or different stages of business cycle, which in turn may affect future CSR performance. For instance, prior literature suggests that CSR performance may be affected by a firm's accounting characteristics, such as size, debt, leverage, return on assets, and cash holdings (Flammer 2015; Flammer and Kacperczyk 2019). The second hypothesis is stated below:

> ***H2:*** *Firms with the same past CSR performance and heterogeneous CSR strategies have different future CSR performance.*

Similarly, I argue that future economic performance may be different for firms with the same past CSR performance, but heterogeneous CSR strategies. I formulate the following hypothesis:

> ***H3:*** *Firms with the same CSR performance and heterogeneous CSR strategies have different future economic performance.*

3.3 Research Design

3.3.1 Data and sample Selection

To construct my sample, I obtain CSR data from MSCI (formerly known as KLD). This database covers roughly the 3000 largest U.S. publicly traded companies by market capitalization. The KLD database is widely used in the literature to measure CSR performance (e.g., Godfrey et al. (2009), Kacperczyk (2009), Barnett and Salomon (2012), Kim et al. (2012), Flammer and Kacperczyk

[17] True CSR is associated with corporate ethical standards. Window dressing CSR is not associated with firms' internalization of high ethical standards.
[18] Active (passive) CSR is (not) associated with strategic targeting of a certain CSR performance (e.g., a certain CSR_Score, a certain number of strengths, a certain proportion between strengths and concerns)

(2016a), Fernando et al. (2017), Flammer and Luo (2017)) and in particular to estimate the effect of CSR on firm performance (e.g., Hong and Kostovetsky (2012), Deng et al. (2013), Servaes and Tamayo (2013), Krüger (2015), Borisov et al. (2016), Lins et al. (2017)). KLD evaluates CSR performance along different social dimensions (environment, employee relations, community, diversity, product, human rights, and corporate governance) and controversial business issues (alcohol, gambling, firearms, military, nuclear, and tobacco). As in Kim et al. (2012), I focus on the first five social dimensions (environment, employee relations, community, diversity, and product).

I obtain accounting data from Compustat and stock return data from CRSP. All continuous variables are winsorized at the top and bottom 1 percent of their distributions. Although the exact number of observations depends on the specific regression, the baseline sample for which we estimate equations contains 13922 firm-year observations and 2627 unique firms for the period 2003-2013.

3.3.2 Measurement of CSR

I use three different variables to measure CSR performance. I start with CSR_Score that I construct by subtracting concern- related measures (Concerns) form strength-related ones (Strengths) among five social dimensions: environment, employee relations, community, diversity, and product.

To construct my second and third measures of CSR I, first, calculate the sum of Strength and Concerns at the firm-year level. This variable is denoted by net_CSR_Score. Within the same CSR_Score, firms have different net_CSR_Score. For instance, within CSR_Score = 0, one firm has net_CSR_Score = 2 (1 Strength and 1 Concern), while another firm has net_CSR_Score = 4 (2 Strengths and 2 Concerns). I define that the firm has high (low) net_CSR_Score if the firm is in the top (bottom) net_CSR_Score quantile within each year - two-digit SIC industry - CSR_Score group.[19]

To study the difference and evolution in CSR properties in the firms with different net_CSR_Score I segregate them into high and low groups according to their net_CSR_Score quantile (top or bottom) in year 2003.[20] Thus, H_CSR_2003 (L_CSR_2003) is a dummy variable that

[19] I require at least two observations for each year - two-digit SIC industry - CSR_SCORE group.
[20] the first year of my sample

equals one if a firm is in the top (bottom) net_CSR_Score quantile within two-digit SIC industry - CSR_Score group in 2003 and zero otherwise. This variable is fixed at the firm level, and, thus, it helps me to study whether there is a difference in the properties between firms that had the same CSR_Score but different net_CSR_Score in 2003.

To measure whether net_CSR_Score has an impact of firms real economic performance, I construct H_CSR (L_CSR) dummy that equals one if a firm is in the top (bottom) net_CSR_Score quantile within each year - two-digit SIC industry - CSR_Score group and zero otherwise.

3.4 Results

3.4.1 Descriptive Statistics

Table 3.1 presents descriptive statistics for selected variables. All variables are defined in Appendix A. All continuous variables are winsorized at the top and bottom 1 percent of their distributions. On average, firms in the sample have CSR_SCORE with a mean value of -0.186 and a median value of 0. It means, that an average firm in my sample has slightly less strengths than concerns, consistent with Kim et al. (2012) and Lins et al. (2017). Average number of Strengths and Concerns is 1.262 and 1.435, respectively. 75% of firm-year observations in my sample have CSR_SCORE between -2 and 1.

For the control variables, the mean value of ROA is 0.022, indicating that my firms are more profitable than their industry peers. 89.9% of my sample firms are audited by the Big 4 accounting firms. An average firm in my sample spends approximately 15% (1%) of its sales on R&D (advertising).

Table 3.2 presents the sample distribution between H_CSR and L_CSR within each CSR_SCORE. In Columns (1) and (2) H_CSR and L_CSR are segregated into 2 and 4 quantiles, respectively. The results indicate that the proportion between H_CSR and L_CSR varies among different CSR_Score. For 75% of our sample, proportion between H_CSR and L_CSR is around 80 to 20 percent. For instance, within CSR_Score = 0, 73% (27%) of observations are in L_CSR (H_CSR) group.

3.4.2 Future CSR Performance

Table 3.3 contains the results for our primary hypothesis. The results are consistent with the view that belonging to group H_CSR and L_CSR is associated with specific firm characteristics. Specifically, firms that are classified as H_CSR are significantly bigger, older, more profitable, have more leverage, have less cash, and are less research intense than those that are in L_CSR group.

Figure 3.1 presents the results for my secondary hypothesis. Figure 3.1 plots the evolution of CSR_Score in L_CSR_2003 and H_CSR_2003 (orange and green solid lines) nine years after the segregation into these groups, as well the average sum of Strengths and Concerns (red and blue dash lines) for L_CSR_2003 and H_CSR_2003 groups. Two main observations are worth emphasizing. First, being in L_CSR_2003 or H_CSR_2003 group is very persistent. Firms that had more Strength and Concerns in 2003 (i.e. classified as H_CSR_2003) continue to have more Strengths and Concerns nine years after than those firms that were classified as L_CSR_2003 in the same year. Second, comparing with L_CSR_2003 firms, H_CSR_2003 firms have a higher CSR_Score in the future regardless of beginning CSR_Score. For instance, Figure 3.1a present the results for firms that had CSR_Score equal to minus two in 2003. The results indicate that after nine years, H_CSR_2003 firms have CSR_Score that is twice as much as those in L_CSR_2003 group (2 and 0, respectively).

To ensure that the future outperformance of H_CSR_2003 group is not simply driven by the year of segregation (2003) I repeat the analysis in Figure 3.1 but for different years of partition. Specifically, I plot the evolution of average CSR_Score in L_CSR_200# and H_CSR_200# groups, while CSR_Score = 0 in 2004, 2006, 2008, or 2010 (Figure 3.2). For instance, Figure 3.2b shows the average CSR_Score in H_CSR_2006 and L_CSR_2006 before and after 2006 in which both groups have the average CSR_Score = 0. The results presented in Figure 3.2 suggest that H_CSR_200# firms, comparing with L_CSR_200# ones, have higher future CSR_Score, regardless of the segregation year. Notably, the net_CSR_num is more persistent than CSR_Score. HH_SC and LL_SC lines never cross, meaning that, regardless of the segregation year, firms either have high or low net_SCORE_num.

To provide more perspective on the difference between H_CSR_2003 and H_CSR_2003

firms, Figure 3.3 plots the evolution of average Strengths and Concerns in H_CSR_2003 and L_CSR_2003 groups within different values of CSR_Score in 2003. This figure provides two insights. First, when the beginning CSR_Score is negative, H_CSR_2003 firms increase Strengths more rapidly than L_CSR_2003 ones, while the difference between Concerns remains the same. Second, when the beginning CSR_Score is positive or zero, L_CSR_2003 firms increase Concerns more rapidly than HH ones, while the difference between Strengths remains the same.

To provide more granularity in the dynamics within H_CSR and L_CSR groups, Tables 3.4 - 3.10 show the transition probabilities for CSR_Score accumulated by an average firm-year. The last rows and columns include the probability of having a score of 3 or more (for Tables 3.11 and 3.10, a number of Strengths or Concerns of 4). Tables 3.4 and 3.5 show CSR_Score's transition probabilities in *t+1* and *t+2*, respectively. The results show that the diagonal cells have the highest values, which confirms the stickiness of CSR performance. Transition probability is, on average, 30% higher in *t+2* than in *t+1*.

Tables 3.6 - 3.9 present the transition probabilities for CSR_Score in *t+1* and *t+2*. The results show H_CSR firms have higher transition probabilities for CSR_Score that L_CSR ones, consistent with the observation from Figure 3.1. Panel A (B) of Tables 3.10 and 3.11 presents the transition probabilities for Strengths (Concerns) in L_CSR and H_CSR groups, respectively. The results show that the transition probability for Concerns is higher for LL firms than for H_CSR ones. This observation is consistent with the results from Figures 3.3c and 3.3d.

3.4.3 The Effect on Real Economic Performance

I estimate various regression models of firms' economic performance as a function of CSR_Score, H_CSR and a number of control variables. Table 3.12 contains my regressions for CSR_Score. The dependent variable in columns (1) and (5) is return on assets (ROA), in columns (2) and (6) is return on equity (ROE), in columns (3) and (7) is capital expenditure over total asset (CAPEX), while in columns (4) and (8), it is employment (EMPL). My variable of interest is the firm's CSR performance (CSR_Score). In all models, I include industry dummies (defined at the two-digit SIC level) for two reasons. First, some industries may be more likely to invest in CSR than others. Sec-

ond, CSR's impact of firms' economic performance may vary in different industries. I also control for time trend by including year fixed effect. Because the residuals can be correlated across firms, for all multivariate analysis, I report test statistics and significance levels based on the standard errors adjusted by a cluster at the firm level.

Columns (1)-(4) show that firms with higher CSR_Score, on average, perform significantly better than their industry peers. The effect of CSR_Score on firms' economic performance is both positive and significant among all but CAPEX variables. A one standard deviation increase in CSR_Score (2.19) is associated with 1.3, 2.5, and 30 percentage points increase in ROA, ROE, and EMPL, respectively.

One concern with the specifications reported in columns (1)-(4) is that strong performance that is associated with CSR_Score may be due to omitted variables that happen to be correlated with CSR, rather due to CSR itself. To address this concern, in columns (5)-(8), I control for a set of firm's characteristics that have been found to affect performance. Following Lins et al. (2017) I include cash holdings (CH), short- and long- term debt (Short_Debt and Long_Debt, respectively), market-to-book (MB), size (SIZE), and Tobin's Q. The results presented in columns (5)-(8) of Table 3.12 confirm that the association between CSR_SCORE and performance disappears after I include a set of control variables. Specifically, the association vanishes after we include SIZE, CH, and Tobin's Q controls.

Table 3.13 presents my regressions for H_CSR dummy. The dependent variables are the same as in Table 3.12 and the main coefficient under interest is H_CSR. In Panels A and B of Table 3.13, I segregate net_CSR_number into 2 and 4 quantiles, respectively. Dummy variable H_CSR equals 1 for firms in the top net_CSR_Score quantile within each year -two-digit SIC industry-CSR_Score group and zero otherwise. The models in columns (1) - (4) provide univariate analysis, while the models in columns (5)-(8) contain the same set of control variables as in Columns (5)-(8) of Table 3.12.

Consistent with my third hypothesis, I find a negative association between H_CSR and accounting performance (ROA, ROE) and positive relation with investment (EMPL) even after I include a set of control variables. H_CSR is negatively associated with capital expenditures (CAPEX), but this relation disappears after I include a set of control variables. This finding

suggests that H_CSR firms, on average, have lower accounting performance in the future. On the other hand, H_CSR firms are associated with more implicit contracts with their employees.[21] In Table 3.14 I re-estimate my previous models, but instead of including my dummy H_CSR as an explanatory variable, I divide firms into net_SCR_num quartiles and include dummies for quartiles 2-4 (the intercept captures the effect of quartile 1). This approach allows me to assess whether the effect of a firm's social capital on returns is more pronounced at very high or very low levels of H_CSR_#. The results show that firms with higher H_CSR_# are associated with lower future accounting performance and more implicit contracts with their employees.

In Table 3.16 I estimate the relation between CSR_Score, H_CSR, and stock returns. The dependent variable is either annual raw returns or four-factor model adjusted return. Following Lins et al. (2017) in addition to the previous set of variables I employ momentum and idiosyncratic risk (IVOL). In Panels A and B, I segregate net_CSR_num into 2 and 4 quantiles, respectively. Columns (1)-(4) show that H_CSR has negative association with stock returns, even when I add the set of control variables. Columns (5)-(8) show that negative association between CSR_Score and stock returns vanishes when I add the set of control variables. Overall, this result is consistent with the previous observations, that H_CSR contains different to CSR_Score information, that remains significant even controlling to a bunch of observable firms' specific characteristics.

It appear that CSR_Score *per se* is not significantly associated with firms' economic performance. Further, H_CSR has negative association with accounting performance and stock returns and positively associated with investment, proxied by the number of implicit contracts with the employees. Potentially, CSR_Score's impact on firm performance depends not only on CSR_Score but also on H_CSR. To incorporate this possibility, I repeat my previous analysis but argument it with the interaction between CSR_Score and H_CSR (interaction). Tables 3.15 and 3.17 present the results for accounting performance and investments and stock returns, respectively. The interaction term between CSR_Score and H_CSR is insignificant for accounting performance and stock returns. However, the interaction term is positive and significant for investments, which are proxied by CAPEX and EMPL. This suggests that higher CSR_SCcore together with H_CSR is positively associated with future superior capital and labor investments.

[21] The results remain the same if I include lagged CSR_Score as additional control variable.

3.5 Conclusion

I study the heterogeneity in CSR strategies practiced by firms that have the same CSR performance and its relation with various firm characteristics. Prior literature provides mixed evidence on the relationship between CSR activities and financial performance, risk, reporting quality, and relations with different stakeholders, as employees and customers. A part of this variation can be explain by the differences in CSR strategies within the same CSR performance. Specifically, I argue that CSR strategies can be proxied by the sum of the number of strengths and concerns within the same CSR performance.

I show that within the same CSR performance firms differ in size, leverage, cash holdings, age, profitability, and research intensity depending on their CSR strategies. Further, I show that different CSR strategies have an association with future CSR, accounting and financial performance, and investments. Overall, these results provide new evidence on CSR that has not been previously measured by CSR performance.

APPENDIX 3.A: Variable Definition

Variable	Variable Definitions
CSR_Score	Net score of CSR ratings, measured as total strengths minus total concerns in five social rating categories of KLD ratings data: community, diversity, employee relations, environment, and product.
$Strenghts$	Sum of total strengths in the five social rating categories of KLD ratings data.
$Concerns$	Sum of total concerns in the five social rating categories of KLD ratings data.
Control variables	
$SIZE$	Natural logarithm of the market value of equity (MVE)
MB	Market-to-book equity ratio
ADJ_ROA	Industry-adjusted ROA, where ROA is measured as income before extraordinary items, scaled by lagged total assets
LEV	Long-term debt scaled by total assets
RD_INT	R&D intensity (R&D expense/net sales) for the year
AD_IND_INT	Advertising intensity for the two-digit SIC code industry for the year
CH	Cash holding ratio of cash and short-term investments to the book value of assets
ROA	Ratio of income before extraordinary items to the book value of assets
$BIG4$	Dummy variable that takes the value of 1 if the firm is audited by a Big 4 auditor; 0 otherwise
$Long\_Debt$	Long-term debt (dltt) divided by total assets (at)
$Short\_Debt$	Short-term debt (dlc) divided by total assets (at)
Ln_Q	Natural logarithm of Tobin's Q
AGE	log(1+#years since a firm appears in CRSP monthly file)

Figure 3.1: CSR_Score dynamics for H_CSR_2003 and L_CSR_2003.

(a) Beginning CSR_Score= -2.

(b) Beginning CSR_Score= -1.

(c) Beginning CSR_Score= 0.

(d) Beginning CSR_SCORE = 1.

Figure 3.2: CSR_Score dynamics for High and Low CSR groups with beginning CSR_Score = 0. High and Low CSR groups are defined in 2004, 2006, 2008, and 2010, respectively.

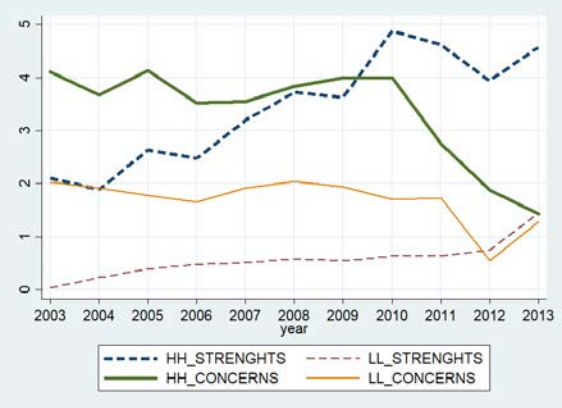
(a) year = 2004.

(b) year = 2006.

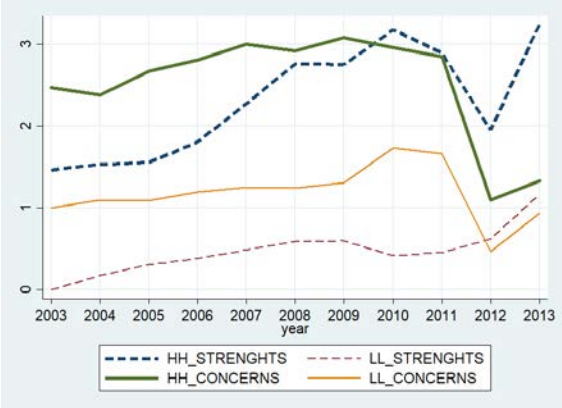
(c) year = 2008.

(d) year = 2010.

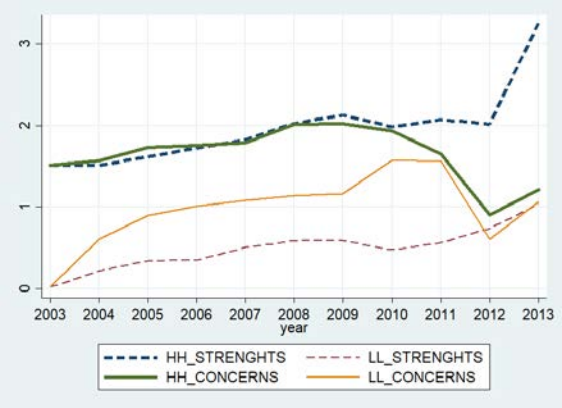
Figure 3.3: Strengths and Concerns dynamics for H_CSR_2003 and L_CSR_2003.



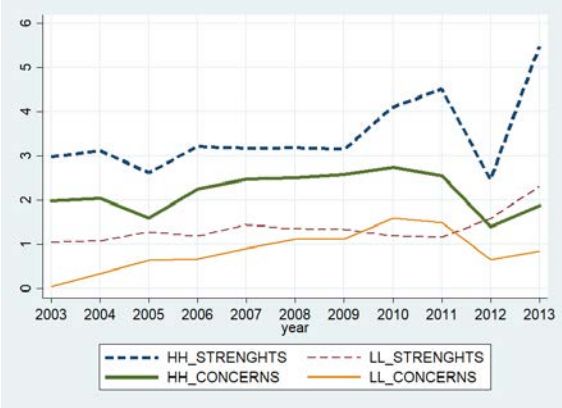
(a) Beginning CSR_Score= -2.



(b) Beginning CSR_Score= -1.



(c) Beginning CSR_Score= 0.



(d) Beginning CSR_Score = 1.

Table 3.1: Descriptive statistics of selected variables

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
CSR_Score	13922	-0.186	2.19	-2	0	1
Strengths	13922	1.262	2.183	0	0	2
Concerns	13922	1.435	1.436	0	1	2
SIZE	13922	7.132	1.545	5.996	6.924	8.051
ROA	13922	0.022	0.139	0.009	0.045	0.084
MB	13922	3.111	4.239	1.454	2.258	3.690
LEV	13922	0.210	0.202	0.012	0.179	0.328
CH	13922	0.201	0.214	0.039	0.120	0.288
RD_INT	13922	0.149	0.643	0	0.001	0.071
AD_IND_INT	13922	0.012	0.027	0	0	0.009
BIG4	13922	0.898	0.303	1	1	1

This table shows descriptive statistics of the main sample used in this analysis. The number of observations from control variables vary according to the test described in every table from here on. This table shows the number of observations used in the main analysis from. All variables are defined in Appendix 3.A.

Table 3.2: Distirbution of H_CSR and L_CSR withing each CSR_Score

		(1)		(2)	
CSR_Score		Freq.	Persent	Freq.	Persent
-7	L_CSR	2	100	2	100
	H_CSR	0	0	0	0
-6	L_CSR	23	74.19	23	100
	H_CSR	8	25.81	0	0
-5	L_CSR	59	69.41	56	93.33
	H_CSR	26	30.59	4	6.67
-4	L_CSR	144	72.36	130	93.53
	H_CSR	55	27.64	9	6.47
-3	L_CSR	521	78.58	492	92.66
	H_CSR	142	21.42	39	7.34
-2	**L_CSR**	**3,074**	**90.63**	**3,019**	**93.21**
	H_CSR	**318**	**9.38**	**220**	**6.79**
-1	**L_CSR**	**3,719**	**81.83**	**3,644**	**87.87**
	H_CSR	**826**	**18.17**	**503**	**12.13**
0	**L_CSR**	**3,524**	**73.07**	**3,041**	**85.88**
	H_CSR	**1,299**	**26.93**	**500**	**14.12**
1	**L_CSR**	**1,639**	**72.65**	**1,444**	**86.83**
	H_CSR	**617**	**27.35**	**219**	**13.17**
2	L_CSR	731	70.22	610	88.02
	H_CSR	310	29.78	83	11.98
3	L_CSR	376	71.62	300	86.21
	H_CSR	149	28.38	48	13.79
4	L_CSR	227	68.37	196	88.69
	H_CSR	105	31.63	25	11.31
5	L_CSR	138	66.03	113	88.98
	H_CSR	71	33.97	14	11.02
6	L_CSR	93	71.54	76	91.57
	H_CSR	37	28.46	7	8.43
7	L_CSR	52	65.82	48	92.31
	H_CSR	27	34.18	4	7.69
8	L_CSR	32	72.73	24	88.89
	H_CSR	12	27.27	3	11.11
9	L_CSR	34	80.95	24	96
	H_CSR	8	19.05	1	4
10	L_CSR	15	83.33	8	100
	H_CSR	3	16.67	0	0
11	L_CSR	7	100	7	100
	H_CSR	0	0	0	0

In Column 1 dummy H_CSR (L_CSR) equals one if a firm's net_CSR_Score is above (below) the median within each year - two-digit SIC industry - CSR_Score group and zero otherwise. In Column 2 dummy H_CSR (L_CSR) equals one if a firm is in the top (bottom) net_CSR_Score quartile within each year - two-digit SIC industry - CSR_Score group and zero otherwise All variables are defined in Appendix 3.A.

Table 3.3: Ttest withing each CSR_Score

CSR_ Score		SIZE	CH	LEV	MB	ROA	RD_ INT	AD_ INT	AGE
-6	L_CSR	6.957	0.076	0.420	5.258	0.018	0.008	0.001	3.011
	H_CSR	8.628	0.089	0.313	2.620	0.050	0.026	0.000	3.988
	Diff	**-1.671*** **	**-0.013**	**0.107**	**2.638**	**-0.032**	**-0.018**	**0.001**	**-0.976*** **
-5	L_CSR	8.051	0.070	0.283	1.435	0.036	0.008	0.001	3.313
	H_CSR	8.871	0.039	0.322	1.758	0.025	0.006	0.003	3.268
	Diff	**-0.820** **	**0.030***	**-0.039**	**-0.324**	**0.011**	**0.002**	**-0.001**	**0.045**
-4	L_CSR	7.772	0.106	0.309	3.311	0.028	0.015	0.005	2.917
	H_CSR	9.018	0.081	0.312	2.013	0.015	0.008	0.003	3.477
	Diff	**-1.246*** **	**0.025**	**-0.004**	**1.297***	**0.012**	**0.007**	**0.002**	**-0.560*** **
-3	L_CSR	6.990	0.147	0.250	2.690	0.019	0.104	0.006	2.697
	H_CSR	8.683	0.075	0.301	2.052	0.038	0.012	0.006	3.347
	Diff	**-1.693*** **	**0.072*** **	**-0.052*** **	**0.638**	**-0.019**	**0.093** **	**0.000**	**-0.650*** **
-2	L_CSR	6.351	0.231	0.198	2.948	0.006	0.198	0.009	2.406
	H_CSR	8.399	0.093	0.282	2.657	0.036	0.021	0.006	3.187
	Diff	**-2.048*** **	**0.138*** **	**-0.084*** **	**0.292**	**-0.030*** **	**0.177*** **	**0.004** **	**-0.781*** **
-1	L_CSR	6.638	0.218	0.201	3.094	0.012	0.168	0.010	2.457

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Table 3.3 *Continued from previous page*

CSR_ _SCORE		SIZE	CH	LEV	MB	ROA	RD_ INT	AD_ INT	AGE
	H_CSR	7.676	0.167	0.243	2.800	0.018	0.130	0.010	2.781
	Diff	**-1.039*** **	**0.051*** **	**-0.042*** **	**0.293***	**-0.006**	**0.038**	**0.000**	**-0.324*** **
0	L_CSR	6.694	0.208	0.195	3.202	0.015	0.177	0.012	2.489
	H_CSR	7.595	0.193	0.221	3.285	0.029	0.124	0.011	2.768
	Diff	**-0.901*** **	**0.015** **	**-0.026*** **	**-0.084**	**-0.013*** **	**0.053** **	**0.001**	**-0.279*** **
1	L_CSR	7.096	0.223	0.196	3.336	0.019	0.207	0.012	2.607
	H_CSR	8.034	0.194	0.202	3.374	0.040	0.092	0.011	2.928
	Diff	**-0.937*** **	**0.029*** **	**-0.006**	**-0.038**	**-0.021*** **	**0.116*** **	**0.001**	**-0.321*** **
2	L_CSR	7.494	0.211	0.188	3.569	0.038	0.171	0.013	2.771
	H_CSR	8.555	0.168	0.218	3.636	0.039	0.102	0.016	3.095
	Diff	**-1.060*** **	**0.043*** **	**-0.029** **	**-0.068**	**-0.001**	**0.069***	**-0.003**	**-0.324*** **
3	L_CSR	8.024	0.174	0.215	3.881	0.059	0.063	0.021	2.977
	H_CSR	9.328	0.145	0.226	4.391	0.059	0.057	0.023	3.373
	Diff	**-1.304*** **	**0.029***	**-0.011**	**-0.510**	**0.001**	**0.006**	**-0.002**	**-0.396*** **
4	L_CSR	8.736	0.217	0.186	4.108	0.063	0.085	0.017	3.121
	H_CSR	9.480	0.148	0.246	3.874	0.056	0.058	0.011	3.484

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Table 3.3 *Continued from previous page*

CSR_ _SCORE		SIZE	CH	LEV	MB	ROA	RD_ INT	AD_ INT	AGE
	Diff	**-0.745*** **	**0.069*** **	**-0.060*** **	**0.233**	**0.007**	**0.027*** **	**0.007***	**-0.362*** **
5	L_CSR	8.914	0.185	0.224	4.137	0.063	0.086	0.015	3.039
	H_CSR	9.928	0.137	0.212	3.616	0.065	0.071	0.017	3.419
	Diff	**-1.014*** **	**0.048** **	**0.012**	**0.522**	**-0.003**	**0.015**	**-0.002**	**-0.380*** **
6	L_CSR	9.441	0.195	0.244	4.413	0.074	0.061	0.025	3.139
	H_CSR	10.938	0.139	0.257	4.323	0.090	0.076	0.031	3.817
	Diff	**-1.496*** **	**0.057** **	**-0.012**	**0.091**	**-0.016**	**-0.015**	**-0.005**	**-0.678*** **
7	L_CSR	9.509	0.195	0.243	4.278	0.064	0.055	0.013	3.356
	H_CSR	10.511	0.138	0.238	3.663	0.066	0.066	0.020	3.674
	Diff	**-1.002*** **	**0.057**	**0.005**	**0.615**	**-0.002**	**-0.011**	**-0.007**	**-0.318**
8	L_CSR	10.090	0.146	0.249	3.632	0.072	0.076	0.023	3.565
	H_CSR	10.678	0.197	0.207	3.662	0.112	0.090	0.025	3.643
	Diff	**-0.588**	**-0.051**	**0.041**	**-0.030**	**-0.040***	**-0.014**	**-0.002**	**-0.078**
9	L_CSR	10.092	0.125	0.259	3.831	0.062	0.051	0.019	3.506
	H_CSR	10.898	0.185	0.218	3.957	0.104	0.085	0.014	3.803
	Diff	**-0.806***	**-0.060**	**0.041**	**-0.127**	**-0.042** **	**-0.034**	**0.004**	**-0.297**

Continued on next page

Table 3.3 *Continued from previous page*

CSR_ _SCORE		SIZE	CH	LEV	MB	ROA	RD_ INT	AD_ INT	AGE
10	L_CSR	9.711	0.178	0.281	5.334	0.077	0.064	0.027	3.509
	H_CSR	9.824	0.108	0.281	9.441	0.102	0.014	0.076	3.637
	Diff	**-0.113**	**0.070**	**0.000**	**-4.107**	**-0.025**	**0.050**	**-0.050***	**-0.128**

Table 3.4: Transition Matrix form *t-1* to *t*. Full Sample.

CSR_Score	-3	-2	-1	0	1	2	3	Total
-3	564	141	99	58	23	11	0	896
	62.95	15.74	11.05	6.47	2.57	1.23	0	100
-2	127	1,653	464	361	57	26	29	2,717
	4.67	**60.84**	17.08	13.29	2.1	0.96	1.07	100
-1	77	494	2,217	426	130	37	35	3,416
	2.25	14.46	**64.9**	12.47	3.81	1.08	1.02	100
0	27	288	625	2,039	366	86	58	3,489
	0.77	8.25	17.91	**58.44**	10.49	2.46	1.66	100
1	5	80	121	312	892	156	61	1,627
	0.31	4.92	7.44	19.18	**54.82**	9.59	3.75	100
2	5	24	20	74	129	373	120	745
	0.67	3.22	2.68	9.93	17.32	**50.07**	16.11	100
3	1	8	11	58	59	95	683	915
	0.11	0.87	1.2	6.34	6.45	10.38	**74.64**	100
Total	806	2,688	3,557	3,328	1,656	784	986	13,805
	5.84	**19.47**	**25.77**	**24.11**	**12**	**5.68**	**7.14**	**100**

All variables are defined in Appendix 3.A.

Table 3.5: Transition Matrix form *t-2* to *t*. Full Sample.

CSR_Score	-3	-2	-1	0	1	2	3	Total
-3	357	192	146	102	48	29	11	885
	40.34	21.69	16.5	11.53	5.42	3.28	1.24	100
-2	161	803	642	440	112	44	57	2,259
	7.13	**35.55**	28.42	19.48	4.96	1.95	2.52	100
-1	118	635	1,299	518	175	52	52	2,849
	4.14	22.29	**45.59**	18.18	6.14	1.83	1.83	100
0	60	427	631	1,231	396	122	71	2,938
	2.04	14.53	21.48	**41.9**	13.48	4.15	2.42	100
1	14	139	178	338	496	180	98	1,443
	0.97	9.63	12.34	23.42	**34.37**	12.47	6.79	100
2	7	47	34	97	144	203	141	673
	1.04	6.98	5.05	14.41	21.4	**30.16**	20.95	100
3	1	16	10	76	73	105	521	802
	0.12	2	1.25	9.48	9.1	13.09	**64.96**	100
Total	718	2,259	2,940	2,802	1,444	735	951	11,849
	6.06	**19.06**	**24.81**	**23.65**	**12.19**	**6.2**	**8.03**	**100**

All variables are defined in Appendix 3.A.

Table 3.6: Transition Matrix from *t-1* to *t* for L_CSR firms.

CSR_Score	-3	-2	-1	0	1	2	3	Total
-3	285	64	42	27	10	3	0	431
	66.13	14.85	9.74	6.26	2.32	0.7	0	100
-2	61	737	188	130	30	16	15	1,177
	5.18	**62.62**	15.97	11.05	2.55	1.36	1.27	100
-1	41	246	1,297	263	56	17	12	1,932
	2.12	12.73	**67.13**	13.61	2.9	0.88	0.62	100
0	13	158	382	1,250	213	38	26	2,080
	0.63	7.6	18.37	**60.1**	10.24	1.83	1.25	100
1	5	33	64	167	494	77	30	870
	0.57	3.79	7.36	19.2	**56.78**	8.85	3.45	100
2	4	6	11	36	61	214	41	373
	1.07	1.61	2.95	9.65	16.35	**57.37**	10.99	100
3	0	6	2	25	20	38	266	357
	0	1.68	0.56	7	5.6	10.64	**74.51**	100
Total	409	1,250	1,986	1,898	884	403	390	7,220
	5.66	**17.31**	**27.51**	**26.29**	**12.24**	**5.58**	**5.4**	**100**

All variables are defined in Appendix 3.A.

Table 3.7: Transition Matrix from *t-2* to *t* for L_CSR firms.

CSR_Score	-3	-2	-1	0	1	2	3	Total
	190	81	68	52	22	8	4	425
	44.71	19.06	16	12.24	5.18	1.88	0.94	100
-2	73	378	276	192	55	28	28	1,030
	7.09	**36.7**	26.8	18.64	5.34	2.72	2.72	100
-1	69	333	802	345	89	24	21	1,683
	4.1	19.79	**47.65**	20.5	5.29	1.43	1.25	100
0	31	261	441	767	235	62	35	1,832
	1.69	14.25	24.07	**41.87**	12.83	3.38	1.91	100
1	9	55	93	189	277	94	48	765
	1.18	7.19	12.16	24.71	**36.21**	12.29	6.27	100
2	5	13	14	54	74	123	52	335
	1.49	3.88	4.18	16.12	22.09	**36.72**	15.52	100
3	0	10	2	29	32	41	194	308
	0	3.25	0.65	9.42	10.39	13.31	**62.99**	100
Total	377	1,131	1,696	1,628	784	380	382	6,378
	5.91	**17.73**	**26.59**	**25.53**	**12.29**	**5.96**	**5.99**	**100**

All variables are defined in Appendix 3.A.

Table 3.8: Transition Matrix from *t-1* to *t* for H_CSR firms.

CSR_Score	-3	-2	-1	0	1	2	3	Total
-3	99	26	20	10	4	5	0	164
	60.37	15.85	12.2	6.1	2.44	3.05	0	100
-2	25	105	47	23	7	3	6	216
	11.57	**48.61**	21.76	10.65	3.24	1.39	2.78	100
-1	20	41	169	54	34	7	7	332
	6.02	12.35	**50.9**	16.27	10.24	2.11	2.11	100
0	6	29	80	229	68	23	17	452
	1.33	6.42	17.7	**50.66**	15.04	5.09	3.76	100
1	0	12	23	75	172	58	20	360
	0	3.33	6.39	20.83	**47.78**	16.11	5.56	100
2	0	6	2	24	40	84	56	212
	0	2.83	0.94	11.32	18.87	**39.62**	26.42	100
3	1	1	1	15	18	35	237	308
	0.32	0.32	0.32	4.87	5.84	11.36	**76.95**	100
Total	151	220	342	430	343	215	343	2,044
	7.39	**10.76**	**16.73**	**21.04**	**16.78**	**10.52**	**16.78**	**100**

All variables are defined in Appendix 3.A.

Table 3.9: Transition Matrix from *t-2* to *t* for H_CSR firms.

CSR_Score	-3	-2	-1	0	1	2	3	Total
-3	66	36	32	17	9	8	5	173
	38.15	20.81	18.5	9.83	5.2	4.62	2.89	100
-2	29	45	56	29	16	5	15	195
	14.87	**23.08**	28.72	14.87	8.21	2.56	7.69	100
-1	28	56	108	59	39	17	12	319
	8.78	17.55	**33.86**	18.5	12.23	5.33	3.76	100
0	17	40	78	158	87	37	20	437
	3.89	9.15	17.85	**36.16**	19.91	8.47	4.58	100
1	5	20	44	84	112	56	35	356
	1.4	5.62	12.36	23.6	**31.46**	15.73	9.83	100
2	0	12	6	30	41	47	69	205
	0	5.85	2.93	14.63	20	**22.93**	33.66	100
3	1	3	2	24	21	41	187	279
	0.36	1.08	0.72	8.6	7.53	14.7	**67.03**	100
Total	146	212	326	401	325	211	343	1,964
	7.43	**10.79**	**16.6**	**20.42**	**16.55**	**10.74**	**17.46**	**100**

All variables are defined in Appendix 3.A.

Table 3.10: Transition Matrix from *t-1* to *t* for Strengths and Concerns of L_CSR firms.

Panel A: Strengths L_CSR firms

Strengths	0	1	2	3	4	Total
0	3,876	460	89	29	29	4,483
	86.46	10.26	1.99	0.65	0.65	100
1	271	1,058	133	37	25	1,524
	17.78	**69.42**	8.73	2.43	1.64	100
2	51	91	367	58	29	596
	8.56	15.27	**61.58**	9.73	4.87	100
3	24	14	48	170	42	298
	8.05	4.7	16.11	**57.05**	14.09	100
4	908	178	42	41	265	1,434
	63.32	12.41	2.93	2.86	**18.48**	100
Total	5,130	1,801	679	335	390	8,335
	61.55	**21.61**	**8.15**	**4.02**	**4.68**	**100**

Panel B: Concerns L_CSR firms

Concerns	0	1	2	3	4	Total
0	1,674	586	166	17	4	2,447
	68.41	23.95	6.78	0.69	0.16	100
1	291	1,875	399	55	8	2,628
	11.07	**71.35**	15.18	2.09	0.3	100
2	146	271	977	87	18	1,499
	9.74	18.08	**65.18**	5.8	1.2	100
3	24	46	68	211	33	382
	6.28	12.04	17.8	**55.24**	8.64	100
4	607	361	151	57	203	1,379
	44.02	26.18	10.95	4.13	**14.72**	100
Total	2,742	3,139	1,761	427	266	8,335
	32.9	**37.66**	**21.13**	**5.12**	**3.19**	**100**

All variables are defined in Appendix 3.A.

Table 3.11: Transition Matrix from *t-1* to *t* for Strengths and Concerns of H_CSR firms.

Panel A: Strengths H_CSR firms

Strengths	0	1	2	3	4	Total
0	139	63	15	5	3	225
	61.78	28	6.67	2.22	1.33	100
1	70	415	74	21	5	585
	11.97	**70.94**	12.65	3.59	0.85	100
2	20	53	231	68	27	399
	5.01	13.28	**57.89**	17.04	6.77	100
3	6	12	42	173	67	300
	2	4	14	**57.67**	22.33	100
4	10	70	37	37	490	644
	1.55	10.87	5.75	5.75	**76.09**	100
Total	245	613	399	304	592	2,153
	11.38	**28.47**	**18.53**	**14.12**	**27.5**	**100**

Panel B: Concerns H_CSR firms

Concerns	0	1	2	3	4	Total
0	153	90	11	2	0	256
	59.77	35.16	4.3	0.78	0	100
1	76	417	114	19	5	631
	12.04	**66.09**	18.07	3.01	0.79	100
2	22	82	221	85	13	423
	5.2	19.39	**52.25**	20.09	3.07	100
3	3	29	60	120	52	264
	1.14	10.98	22.73	**45.45**	19.7	100
4	9	66	54	54	396	579
	1.55	11.4	9.33	9.33	**68.39**	100
Total	263	684	460	280	466	2,153
	12.22	**31.77**	**21.37**	**13.01**	**21.64**	**100**

All variables are defined in Appendix 3.A.

Table 3.12: Operating performance and CSR_Score

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
CSR_Score	0.00595***	0.0114***	5.72e-05	0.138***	0.000189	-0.000570	0.000313	-0.00193
	(0.00103)	(0.00268)	(0.000308)	(0.0152)	(0.000766)	(0.00223)	(0.000323)	(0.00622)
SIZE					0.0181***	0.0373***	-0.00240***	0.604***
					(0.00143)	(0.00389)	(0.000585)	(0.0110)
MB					-0.000752	0.00559	-0.000132	0.00896***
					(0.000655)	(0.00354)	(0.000125)	(0.00217)
CH					-0.226***	-0.369***	-0.0424***	-0.664***
					(0.0158)	(0.0425)	(0.00369)	(0.0634)
Long_Debt					-0.0906***	0.00534	-0.00714	0.216***
					(0.0135)	(0.0498)	(0.00482)	(0.0710)
Short_Debt					-0.0806**	0.00851	-0.0492***	0.796***
					(0.0360)	(0.122)	(0.0119)	(0.218)
ln_Q					0.0600***	0.0844***	0.0261***	-0.941***
					(0.0105)	(0.0280)	(0.00229)	(0.0471)
Constant	0.111***	0.234***	0.0596***	1.842***	-0.0358	-0.101*	0.0582***	-1.489***
	(0.0221)	(0.0561)	(0.00933)	(0.205)	(0.0221)	(0.0570)	(0.0105)	(0.135)
Observations	13,922	13,920	13,903	13,853	13,822	13,820	13,803	13,758
Adjusted R-squared	0.094	0.026	0.410	0.235	0.230	0.071	0.437	0.749
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.gvkey	YES	YES	YES	YES	YES	YES	YES	YES

This table shows that results of the relationship between operating performance and CSR_Score. All independent variables are in *t-1*. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix 3.A.

Table 3.13: Operating performance and H_CSR

Panel A

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
H_CSR	0.0206***	0.0389***	-0.00302**	0.872***	-0.00620*	-0.0188*	-0.000781	0.124***
	(0.00368)	(0.0108)	(0.00132)	(0.0504)	(0.00340)	(0.0107)	(0.00126)	(0.0228)
CONTROLS	NO	NO	NO	NO	YES	YES	YES	YES
Observations	13,922	13,920	13,903	13,853	13,822	13,820	13,803	13,758
Adjusted R-squared	0.093	0.025	0.410	0.289	0.230	0.072	0.437	0.751
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES	YES	YES	YES	YES

Panel B

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
H_CSR	0.0268***	0.0448***	-0.00469***	1.098***	-0.0108**	-0.0359**	-0.00224	0.205***
	(0.00539)	(0.0154)	(0.00170)	(0.0710)	(0.00503)	(0.0151)	(0.00167)	(0.0363)
CONTROLS	NO	NO	NO	NO	YES	YES	YES	YES
Observations	11,331	11,330	11,317	11,273	11,244	11,243	11,230	11,190
Adjusted R-squared	0.103	0.026	0.416	0.301	0.241	0.072	0.440	0.727
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the results of the relationship between operating performance and H_CSR. All independent variables are in *t-1*. In Panel A dummy H_CSR equals one if a firm's net_CSR_Score is above the median within each year-two-digit SIC industry - CSR_Score group and zero otherwise. In Panel B dummy H_CSR equals one if a firm is in the top net_CSR_Score quartile within each year-two-digit SIC industry-CSR_Score group and zero otherwise. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix 3.A.

Table 3.14: Operating performance and H_CSR. Quartile Dummies of H_CSR

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
H_CSR_4	0.0261***	0.0428***	-0.00468***	1.101***	-0.00817*	-0.0313**	-0.00212	0.180***
	(0.00522)	(0.0152)	(0.00166)	(0.0706)	(0.00477)	(0.0146)	(0.00162)	(0.0347)
H_CSR_3	0.0182***	0.0361***	-0.00240	0.766***	-0.00568	-0.0165	-0.000415	0.0902***
	(0.00394)	(0.0118)	(0.00160)	(0.0522)	(0.00365)	(0.0119)	(0.00153)	(0.0245)
H_CSR_2	0.0117**	0.00109	-0.00422**	0.448***	-0.00445	-0.0334**	-0.00299*	0.0339
	(0.00525)	(0.0174)	(0.00187)	(0.0526)	(0.00466)	(0.0167)	(0.00177)	(0.0252)
SIZE					0.0190***	0.0402***	-0.00210***	0.587***
					(0.00156)	(0.00406)	(0.000551)	(0.0107)
MB					-0.000756	0.00558	-0.000130	0.00904***
					(0.000653)	(0.00353)	(0.000125)	(0.00216)
CH					-0.226***	-0.367***	-0.0423***	-0.672***
					(0.0159)	(0.0425)	(0.00370)	(0.0629)
Long_Debt					-0.0906***	0.00538	-0.00729	0.214***
					(0.0135)	(0.0498)	(0.00481)	(0.0707)
Short_Debt					-0.0787**	0.0156	-0.0480***	0.769***
					(0.0359)	(0.122)	(0.0119)	(0.216)
ln_Q					0.0588***	0.0802***	0.0258***	-0.918***
					(0.0107)	(0.0284)	(0.00232)	(0.0469)
Constant	0.115***	0.244***	0.0610***	1.820***	-0.0394*	-0.111*	0.0574***	-1.413***
	(0.0212)	(0.0546)	(0.00941)	(0.207)	(0.0220)	(0.0577)	(0.0105)	(0.134)
Observations	13,922	13,920	13,903	13,853	13,822	13,820	13,803	13,758
Adjusted R-squared	0.093	0.025	0.411	0.301	0.230	0.072	0.437	0.751
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES	YES	YES	YES	YES

This table shows that results of the relationship between operating performance and H_CSR. H_CSR is segregated into quartiles, where each variable is set as a dummy that corresponds to a specific quartile. For instance, H_CSR_4 is set to one if a firm is in the fourth quartile of net_CSR_Score and zero otherwise. The intercept captures the effect of quartile one. All independent variables are in *t-1*. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix 3.A.

Table 3.15: Operating performance and H_CSR. Interactions between CSR_Score and H_CSR.

Panel A

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
H_CSR	0.0177***	0.0337***	-0.00301**	0.812***	-0.00622*	-0.0184*	-0.000759	0.125***
	(0.00365)	(0.0108)	(0.00131)	(0.0478)	(0.00340)	(0.0107)	(0.00125)	(0.0228)
CSR_Score	0.00545***	0.00877***	-0.000287	0.109***	0.000163	-0.00228	-0.000118	-0.0106
	(0.00112)	(0.00307)	(0.000330)	(0.0125)	(0.000866)	(0.00260)	(0.000337)	(0.00653)
interaction	-0.000344	0.00643	0.00185***	0.00604	0.000320	0.00761	0.00179***	0.0310**
	(0.00172)	(0.00589)	(0.000619)	(0.0314)	(0.00132)	(0.00505)	(0.000590)	(0.0133)
Constant	0.109***	0.230***	0.0607***	1.726***	-0.0389*	-0.110*	0.0580***	-1.422***
	(0.0220)	(0.0560)	(0.00939)	(0.216)	(0.0220)	(0.0568)	(0.0105)	(0.134)
CONTROLS	NO	NO	NO	NO	YES	YES	YES	YES
Observations	13,922	13,920	13,903	13,853	13,822	13,820	13,803	13,758
Adjusted R-squared	0.097	0.027	0.411	0.312	0.230	0.072	0.437	0.751
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES	YES	YES	YES	YES

Panel B

VARIABLES	ROA	ROE	CAPEX	EMPL	ROA	ROE	CAPEX	EMPL
H_CSR	0.0251***	0.0442***	-0.00403**	1.085***	-0.0114**	-0.0349**	-0.00162	0.218***
	(0.00553)	(0.0154)	(0.00164)	(0.0722)	(0.00508)	(0.0149)	(0.00163)	(0.0370)
CSR_Score	0.00532***	0.00864***	-0.000293	0.0948***	0.000127	-0.00243	-0.000184	-0.0101
	(0.00123)	(0.00335)	(0.000344)	(0.0127)	(0.000955)	(0.00296)	(0.000354)	(0.00705)
interaction	-0.00153	0.00450	0.00198**	0.0341	-0.00177	0.00461	0.00193**	0.0437**
	(0.00308)	(0.00937)	(0.000865)	(0.0457)	(0.00239)	(0.00836)	(0.000846)	(0.0194)
Constant	0.0947***	0.193***	0.0502***	1.823***	-0.0486*	-0.183***	0.0506***	-1.305***
	(0.0252)	(0.0525)	(0.00535)	(0.228)	(0.0271)	(0.0597)	(0.00758)	(0.167)
CONTROLS	NO	NO	NO	NO	YES	YES	YES	YES
Observations	11,331	11,330	11,317	11,273	11,244	11,243	11,230	11,190
Adjusted R-squared	0.107	0.026	0.416	0.319	0.240	0.072	0.440	0.728
r clust gvkey	YES	YES	YES	YES	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES	YES	YES	YES	YES

This table shows the results of the relationship between operating performance and H_CSR, CSR_Score and their interaction. All independent variables are in *t-1*. In Panel A dummy H_CSR equals one if a firm's net_CSR_Score is above the median within each year-two-digit SIC industry - CSR_Score group and zero otherwise. In Panel B dummy H_CSR equals one if a firm is in the top net_CSR_Score quartile within each year-two-digit SIC industry-CSR_Score group and zero otherwise. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix 3.A.

Table 3.16: Stock returns, CSR_Score, and H_CSR
This table shows the results of the relationship between operating performance CSR_Score, and H_CSR. All but momentum independent variables are in *t*. Variable momentum is in *t-1*. In Panel A dummy H_CSR equals one if a firm's net_CSR_Score is above the median within each year-two-digit SIC industry - CSR_Score group and zero otherwise. In Panel B dummy H_CSR equals one if a firm is in the top net_CSR_Score quartile within each year-two-digit SIC industry-CSR_Score group and zero otherwise. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix A.

Panel A

VAR	RET	AB_RET	RET	AB_RET	RET	AB_RET	RET	AB_RET
CSR_Score	-0.0161***	-0.00477	-0.00541	-0.00296				
	(0.00464)	(0.00388)	(0.00510)	(0.00437)				
H_CSR					-0.0798***	-0.0247*	-0.0478***	-0.0223
					(0.0162)	(0.0141)	(0.0173)	(0.0154)
SIZE			-0.0110	0.0140**			-0.00622	0.0162**
			(0.00732)	(0.00601)			(0.00767)	(0.00635)
MB			0.00378	0.00145			0.00362	0.00135
			(0.00320)	(0.00258)			(0.00323)	(0.00259)
CH			-0.224***	-0.139***			-0.223***	-0.139***
			(0.0609)	(0.0494)			(0.0608)	(0.0495)
Long_Debt			0.133**	0.0985*			0.137**	0.101*

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Table 3.16 *Continued from previous page*

VAR	RET	AB_RET	RET	AB_RET	RET	AB_RET	RET	AB_RET
			(0.0640)	(0.0598)			(0.0633)	(0.0594)
Short_Debt			-0.253	-0.240			-0.265	-0.247
			(0.174)	(0.155)			(0.172)	(0.154)
ln_Q			0.377***	0.335***			0.362***	0.328***
			(0.0405)	(0.0344)			(0.0410)	(0.0351)
momentum			-0.167***	-0.0980***			-0.166***	-0.0974***
			(0.0145)	(0.0136)			(0.0145)	(0.0136)
lIVOL			2.371***	0.0511			2.481***	0.107
			(0.877)	(0.570)			(0.881)	(0.574)
Constant	0.114	-0.0154	0.272	-0.130	0.118	-0.0148	0.256	-0.138
	(0.0839)	(0.0761)	(0.229)	(0.181)	(0.0833)	(0.0755)	(0.230)	(0.181)
Observations	5,054	4,832	3,193	3,136	5,054	4,832	3,193	3,136
Adj R-sq	0.176	0.016	0.274	0.148	0.177	0.016	0.276	0.148
r cl gvk	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
IND FE	YES	YES	YES	YES	YES	YES	YES	YES

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Table 3.16 *Continued from previous page*

VAR	RET	AB_RET	RET	AB_RET	RET	AB_RET	RET	AB_RET
Panel B								
VARIABLES	RET	AB_RET	RET	AB_RET	RET	AB_RET	RET	AB_RET
CSR_Score	-0.0188***	-0.00570	-0.00689	-0.00101				
	(0.00582)	(0.00468)	(0.00623)	(0.00520)				
H_CSR					-0.0624**	-0.0323	-0.0666***	-0.0599***
					(0.0251)	(0.0197)	(0.0246)	(0.0204)
SIZE			-0.00562	0.0176***			0.000608	0.0238***
			(0.00878)	(0.00677)			(0.00956)	(0.00749)
MB			0.00667*	0.00430			0.00642*	0.00416
			(0.00351)	(0.00297)			(0.00353)	(0.00295)
CH			-0.198***	-0.122**			-0.199***	-0.121**
			(0.0672)	(0.0539)			(0.0670)	(0.0539)
Long_Debt			0.142*	0.125*			0.145**	0.125*

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Table 3.16 *Continued from previous page*

VAR	RET	AB_RET	RET	AB_RET	RET	AB_RET	RET	AB_RET
			(0.0730)	(0.0656)			(0.0722)	(0.0647)
Short_Debt			-0.227	-0.242			-0.235	-0.237
			(0.201)	(0.182)			(0.199)	(0.180)
ln_Q			0.342***	0.311***			0.325***	0.297***
			(0.0459)	(0.0377)			(0.0463)	(0.0380)
momentum			-0.168***	-0.100***			-0.166***	-0.0991***
			(0.0161)	(0.0144)			(0.0162)	(0.0145)
lIVOL			1.949*	-0.418			2.074**	-0.346
			(1.011)	(0.630)			(1.009)	(0.635)
Constant	0.106	0.0180	0.257	-0.133	0.0747	0.00873	0.220	-0.165
	(0.0973)	(0.105)	(0.308)	(0.232)	(0.0950)	(0.105)	(0.309)	(0.233)
Observations	4,107	3,904	2,452	2,403	4,107	3,904	2,452	2,403
Adj R-sq	0.173	0.014	0.269	0.153	0.172	0.014	0.270	0.156
r cl gvk	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
IND FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 3.17: Stock Returns and H_CSR. Interactions between CSR_Score and H_CSR.

Panel A

VAR	RET	AB_RET	RET	AB_RET
CSR_Score	-0.0187***	-0.00700	-0.00650	-0.00208
	(0.00556)	(0.00457)	(0.00619)	(0.00530)
H_CSR	-0.0777***	-0.0248*	-0.0479***	-0.0219
	(0.0164)	(0.0142)	(0.0173)	(0.0154)
interaction	0.0158*	0.0101	0.00457	-0.00267
	(0.00891)	(0.00760)	(0.00920)	(0.00783)
Constant	0.141*	-0.00617	0.254	-0.139
	(0.0838)	(0.0756)	(0.230)	(0.181)
CONTROLS				
Observations	5,054	4,832	3,193	3,136
Adjusted R-squared	0.179	0.016	0.276	0.148
r clust gvkey	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES

Panel B

VAR	RET	AB_RET	RET	AB_RET
CSR_Score	-0.0188***	-0.00690	-0.00573	-0.000827
	(0.00611)	(0.00493)	(0.00664)	(0.00561)
H_CSR	-0.0596**	-0.0304	-0.0689***	-0.0605***
	(0.0249)	(0.0198)	(0.0246)	(0.0208)
interaction	0.00456	0.0156	-0.0135	-0.00340
	(0.0186)	(0.0143)	(0.0162)	(0.0120)
Constant	0.108	0.0210	0.216	-0.166
	(0.0975)	(0.105)	(0.309)	(0.233)
CONTROLS				
Observations	4,107	3,904	2,452	2,403
Adjusted R-squared	0.174	0.014	0.271	0.155
r clust gvkey	YES	YES	YES	YES
i.fyear	YES	YES	YES	YES
i.sic2	YES	YES	YES	YES

This table shows the results of the relationship between stock returns and H_CSR, CSR_Score and their interaction. All independent variables are in *t-1*. In Panel A dummy H_CSR equals one if a firm's net_CSR_Score is above the median within each year-two-digit SIC industry - CSR_Score group and zero otherwise. In Panel B dummy H_CSR equals one if a firm is in the top net_CSR_Score quartile within each year-two-digit SIC industry- CSR_Score group and zero otherwise. *, **, *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively, based on a two-tailed test. Robust standard errors in parentheses. All variables are defined in Appendix 3.A.

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